

October 30, 2019

**Virginia Coastal Zone Management Program
Semiannual Section B.2-4 Report
For the Period from April 1, 2019 – September 30, 2019**

	Page
SECTION B.2 PERMIT ADMINISTRATION, MONITORING AND ENFORCEMENT	
The core agencies within the Virginia Coastal Zone Management Program are:	
1) Department of Environmental Quality (DEQ)	
a) Virginia Coastal Zone Management Program Office	2
b) Water Permitting Programs (VPDES, VPA, VWP)	2
c) Water Program Enforcement and Compliance	3
d) Air Permitting Program	5
e) Air Program Enforcement and Compliance	7
f) Erosion and Sediment Control	8
g) Office of Stormwater Management – Local Government Assistance Programs - Chesapeake Bay Preservation Act	9
2) Virginia Marine Resources Commission (VMRC)	
a) Habitat Management Division	10
b) Fisheries Management Division	10
c) Law Enforcement Division	11
3) Virginia Department of Health (VDH)	
a) Division of Shellfish Safety and Waterborne Hazards	12
b) Division of Onsite Sewage and Water Services, Environmental Engineering and Marina Programs	13
4) Department of Conservation and Recreation (DCR)	
a) Division of Soil and Water Conservation	13
b) Division of Natural Heritage	14
c) Division of Planning and Recreational Resources	39
5) Department of Game and Inland Fisheries (DGIF)	39
 SECTION B.3 FEDERAL CONSISTENCY	 51
 SECTION B.4 PROGRAM CHANGES	 56

SECTION B.2 PERMIT ADMINISTRATION, MONITORING AND ENFORCEMENT

1) DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ)

a) DEQ – Virginia Coastal Zone Management Program

Virginia CZM Program staff continued to work with our partner agencies to implement the Program over the last 6 months. For a full description of staff activities, please refer to the Section A report for Task 1.01.

b) DEQ – Water Permitting Programs

DEQ- Virginia Water Protection Permit (VWPP) Program

The Virginia Water Protection (VWP) Permit Program authorizes surface water withdrawal activities¹ and activities in wetlands and surface waters that may or may not require a Clean Water Act Section 401 Water Quality certification. In addition to the permit processing and wetlands impact data for the Tidewater region of the Commonwealth, this narrative highlights any challenges encountered during the reporting period.

During the reporting period of April 1 to September 30, 2019, the VWP Permit Program issued nine individual permits and 67 general permit coverages; processed 27 Notices of Planned Change on general permit coverages; 18 individual permit modifications; and no individual permit reissuances. For the purposes of this report, no permit application denials, withdrawals, or waivers were included.

The average time to process a general permit coverage was 20 days, and the average time to process an individual permit was 66 days. No processing delays occurred during this reporting period.

Approximately 56 acres of wetland impacts occurred during the reporting period. During this reporting period, approximately 97 wetland credits were purchased at compensatory mitigation banks and about one acre of wetlands were created through permittee-responsible compensation.

During the reporting period, nine compliance actions were taken on individual permits and 54 on general permit coverages. Compliance actions for four of the individual permits and 25 of the general permit coverages are still active. Additionally, ten compliance actions were taken on activities not having a VWP permit, and all but two of these are still active. During this period, 322 inspections took place.

The VWP Permit Program did not receive comments or concerns about, or make changes to procedures associated with, expediting decision-making for the management of coastal resources.

DEQ – Virginia Pollution Abatement (VPA) Water Permitting Program

The Virginia Pollution Abatement permit (VPA) is required for facilities that manage wastewater, animal waste, biosolids or industrial sludges in such a manner that they do not have a discharge from the site. For example, an agricultural facility that temporarily stores wastewater to be land applied as part of an irrigation/fertilization program.

During the period between April 1, 2019 and September 30, 2019, two applications were received for modification of a VPA Individual Permit that authorizes the land application of biosolids, they remain pending. Three VPA permit applications for reissuance were received during that period – all for permits that authorize the land application of biosolids; those applications are also pending. Eight permit actions were completed during this permit; all for applications that were submitted prior to the reporting period. Four major modifications of biosolids VPA-IPs, one minor modification of a non-biosolids VPA-IP and three reissuances of non-biosolids VPA IPs were all signed during the reporting period.

During the period between April 1, 2019 and September 30, 2019, no applications were received for coverage under the VPA General Permit for Poultry Waste Management. Four applications for ownership change were received, all of the modifications were completed during the period. No applications were received for farms, located in the Coastal Zone Management area, seeking coverage under the VPA General Permit for Animal Feeding Operations, during this period.

DEQ – Virginia Pollution Discharge Elimination System (VPDES) Water Permitting Program

There are a total of 296 individual municipal and industrial CZM area VPDES permits. This number and the numbers in the table represent typical activity in the program.

There are also numerous facilities registered under general permits in CZM areas including 65 car wash, 100 concrete products, 12 cooling water, 302 domestic sewage $\leq 1,000$ GPD, 56 nonmetallic mineral mining, 29 petroleum, 13 potable water treatment, 47 seafood processors, and 528 industrial stormwater. These represent typical numbers for permit registrants in CZM areas in Virginia. There are a number of general permit coverages that are automatically covered under a permit (e.g., pesticide applications and hydrostatic testing) and are not entered into the CEDS data base. There are also 59 registrants under the nutrient trading general permit but these facilities are included in the individual permit count.

VPDES/VPA - October 1, 2017 – March 31, 2018*										
	Permits Issued / Avg Proc. Days ⁽¹⁾		Permits Reissued / Avg Proc. Days		Permits Modified** / Avg Proc. Days		Denied / Avg Proc. Days		Permits Reissue Pending / Avg Proc. Days	
VPDES	0	NA	13	384	1	280	0	NA	35***	NA
VPA	0	NA	3	300	2	493	0	NA	3	130
VPA GP	0	NA	NA	NA	4	18	0	NA	NA	NA

Processing day is the amount of time between receiving a complete application and making the final case decision (issuance, reissuance, modification, etc.).

* Information from CEDS (Comprehensive Environmental Data System) database

** Major modifications

***This represents existing VPDES individual permits expired but pending through March 31, 2019.

c) DEQ – Water Program Enforcement and Compliance

DEQ continues to apply both informal and formal enforcement measures in the enforcement program. Reference Table 1, below.

Informal measures, such as Warning Letters and Letters of Agreement, are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. For the

period April 1, 2019 through September 30, 2019, DEQ issued 164 Warning Letters and 1 Letter of Agreement for violations of VPDES, VPA, VWPP, and Ground Water program requirements.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation followed by a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Administrative Orders or court orders may be sought. Between April 1, 2019 through September 30, 2019, DEQ issued 20 Notices of Violation for violations of VPDES, VPA, VWPP, and Ground Water program requirements. During the same period, the agency concluded enforcement cases with the issuance of 17 Consent Orders that assessed a total of \$238,753.00 in civil charges.

Table 1

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Warning Letters	164	N/A
Informal	Letters of Agreement	1	N/A
Formal	Notices of Violation	20	N/A
Formal	Consent Order	17	\$238,753.00
Total		202	\$238,753.00

d) DEQ – Air Permitting Program

OFFICE OF AIR PERMIT PROGRAMS PERMITS ISSUED REPORT FOR VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM

Period: April 1, 2019 – September 30, 2019

PERMIT TYPE	NUMBER OF PERMITS ISSUED	AVERAGE PROCESSING TIME (Days)
PSD & NA	1	231
Major	0	NA
Minor	58	32
Administrative Amendment	3	55
Exemptions	8	13
State Operating	1	326
Federal Operating (Title V) Initial Issuance	0	NA
Federal Operating (Title V) Renewal	6	365
Acid Rain (Title IV)	0	NA
Total Number Permits Issued	<u>77</u>	

* The average processing time is determined by computing the difference between when the application was deemed administratively complete and when the permit was issued.

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Portions of the Piedmont Regional Office and the Tidewater Regional Office only.

Definitions:

Prevention of Significant Deterioration (PSD) = A source which emits **250 tons or more** per year of any regulated pollutant or is one of 28 specific industries listed in the state regulations and will emit 100 tons per year of a regulated pollutant.

Major = A source which emits, or has the potential to emit, **100 tons or more** per year of any air pollutant.

Minor = A source which emits, or has the potential to emit, **less than 100 tons** per year of any air pollutant.

State Operating= Permit written pursuant to 9 VAC 5-80-800 et al.

Administrative Consent Agreement = An agreement that the owner or any other person will perform specific actions to diminish or abate the causes of air pollution for the purpose of coming into compliance with regulations, by mutual agreement of the owner or any other person and the Board.

Administrative Amendment = Administrative changes made to the permit to clarify or correct an issued permit. For example, typographical errors, name changes, etc.

Exemption = Facilities are exempted from permitting requirements by exemption levels defined in 9 VAC 5-80-1105.

Federal Operating (Title V) = a source that emits **10 tons or more** per year of any hazardous air pollutant, **or 25 tons** per year of any combination of hazardous air pollutants or emits any criteria pollutant above 100 tons per year.

Acid Rain (Title IV) = Permits issued specifically to address SO₂ and NO_x from electric generating units covered under the Acid Rain regulations.

**OFFICE OF AIR PERMIT PROGRAMS
PERMITS PENDING REPORT FOR
VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM**

Permits pending as of September 30, 2019

PERMIT TYPE	NUMBER OF PERMITS PENDING
PSD & NA	1
Major	4
Minor	57
Administrative Amendment	7
Exemptions	1
State Operating	5
Federal Operating (Title V) Initial Issuance	8
Federal Operating (Title V) Renewal	60
Acid Rain (Title IV) Initial Issuance	1
Acid Rain (Title IV) Renewal	<u>8</u>
Total Permits Pending	<u>152</u>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

OFFICE OF AIR PERMIT PROGRAMS
PERMITS WITHDRAWN AND APPLICATIONS DENIED REPORT FOR
VIRGINIA'S COASTAL RESOURCES MANAGEMENT PROGRAM

Period: April 1, 2019 – September 30, 2019

PERMIT TYPE	NUMBER OF PERMITS WITHDRAWN	NUMBER OF APPLICATIONS DENIED
PSD	0	0
Major	0	0
Minor	4	0
Administrative Amendment	0	0
Exemptions	2	0
State Operating	1	0
Federal Operating (Title V)	0	0
Acid Rain (Title IV)	2	0
Total Permits Rescinded	<u>9</u>	<u>0</u>

Note: The information provided for this report includes data from the Northern Virginia Regional Office, Piedmont Regional Office and Tidewater Regional Office only.

e) DEQ – Air Program Enforcement and Compliance

DEQ continues to apply both informal and formal enforcement measures in its air enforcement program. Reference Table 2, on the following page.

Informal measures include Requests for Corrective Action and Warning Letters. These actions are used in those cases where non-compliance is not significant in nature and where compliance can be achieved in a short period of time. During the six-month period beginning April 1, 2019 through September 30, 2019, DEQ issued 45 Requests for Corrective Action and 15 Warning Letters.

Formal enforcement actions are used in those cases where non-compliance is more serious or may take a significant amount of time to correct. Formal measures generally involve the issuance of a Notice of Violation and negotiation of a Consent Order, or an Executive Compliance Agreement in the case of a state agency. In some cases, Unilateral Orders or court orders may be pursued. Between April 1, 2019 and September 30, 2019, DEQ initiated 23 new formal enforcement actions via issuance of Notices of Violation. Additionally, the Agency issued 7 Consent Orders; assessing \$74,418.77 in civil charges.

Table 1

Measure	Action Type	Count	Total Civil Charges Assessed
Informal	Requests for Corrective Action	45	N/A
Informal	Warning Letters	15	N/A
Formal	Notices of Violation	23	N/A
Formal	Consent Orders	7	\$74,418.77
Total		90	\$74,418.77

f) DEQ – Erosion and Sediment Control

Summary of Specific Outputs:

Specific Outputs	Progress / Status
14 CZM Chesapeake Bay Land Disturbing Activities Permitted - Projects less than 1 acre found within Chesapeake Bay Designated Areas.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
285 CZM Small Construction Activities Permitted- Land Disturbing Activities greater than or equal to 1 acre and less than 5 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
84 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 5 acres and less than 10 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved through ongoing permit review, technical assistance, and project inspection.
70 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 10 acres and less than 50 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
7 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 50 acres and less than 100 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
7 CZM Large Construction Activities Permitted- Land Disturbing Activities greater than or equal to 100 acres.	Permit coverage has been issued and projects are under construction. Compliance is achieved thru ongoing permit review, technical assistance, and project inspection.
467 Total CZM Land Disturbing Activities Permitted thru coverage under the Construction General Permit.	Coastal Zone Management resources are conserved and restored through permit compliance.

Supplemental Narrative:

Considerable erosion and sediment control and stormwater management progress occurred during the performance period. New and improved requirements for project stabilization during construction and recently enhanced post construction requirements will result in further improvements to coastal zone resources. The new post construction requirements have been developed to more closely mimic predevelopment hydrology found in a naturally wooded site condition. The implementation of these new requirements will result in less downstream sediment export and fewer nutrient export impacts from land development.

g) DEQ- Office of Stormwater Management – Local Government Assistance Programs- Chesapeake Bay Preservation Act

Summary

Program Description

The Chesapeake Bay Preservation Act program is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning. Specifically, these requirements fall into three implementation phases. Phase I consists of local governments designating and mapping Chesapeake Bay Preservation Areas (CBPAs) and adopting land use and development performance criteria to protect those features. CBPAs include Resource Protections Areas (RPAs) and Resource Management Areas (RMAs). RPAs are made up of tidal wetlands, tidal shores, nontidal wetlands connected and contiguous to tidal wetlands or perennial streams and a 100-foot fully vegetated buffer. RMAs include lands adjacent to RPAs that are made up of land features such as highly erodible soils, steep slopes, and floodplains. Sixty of the 84 Tidewater localities have identified their entire jurisdiction as RMA. Phase II consists of the incorporation of water quality protection measures into local comprehensive plans. Phase III involves the review and revision of local land use codes to include specific standards that implement water quality performance criteria.

Technical Assistance & Training

During the reporting period, April 1, 2019 – September 30, 2019, staff continued to provide assistance and training to Bay Act localities. For this period, 3 formal training and 3 outreach events were conducted and 88 instances of technical assistance, including site plan review, were documented.

Environmental Impact Reviews

Through the Environmental Impact Review process, staff continued to review plans for State and Federal projects to ensure those projects were consistent with the Bay Act. During the reporting period, 50 environmental impact reviews were conducted.

Compliance Reviews

During this reporting period, Local Government Assistance Programs (LGAP) staff were needed to assist in the Phase III WIP process; therefore, Compliance Reviews were mostly deferred. Two new compliance reviews were initiated and 1 has been completed; however, Condition Reviews are ongoing. Since the Compliance Review process was reinitiated in 2015 (after having been suspended for a period of three years to allow LGAP staff to work on local stormwater program development), 46 reviews have been initiated and 15 localities have been found compliant.

During these reviews, staff assess how well local governments are ensuring that impervious cover and land disturbance are minimized, and indigenous vegetation is maintained, on approved development projects and if other Bay Act general performance criteria are being applied to the use and development of land.

2) VIRGINIA MARINE RESOURCES COMMISSION (VMRC)

a) VMRC – Habitat Management Division

During the period April 1, 2019 through September 30, 2019 the Habitat Management Division received 1,198 applications for projects involving State-owned submerged lands, wetlands or dunes. These applications were for projects such as piers, boathouses, boat ramps, marinas, dredging and shoreline stabilization. As the clearinghouse for the Joint Permit Application all applications were assigned a processing number by the Division and forwarded to the appropriate agencies, including, local wetlands boards, the Norfolk District of the U.S. Army Corps of Engineers, the Department of Environmental Quality, VIMS and others as necessary.

A public interest review was initiated and site inspections were conducted for those projects requiring a permit from the Marine Resources Commission. Likewise, Habitat Management staff also conducted site inspections for all projects requiring a local wetlands board permit and evaluated each local board decision for Commissioner review. Habitat Management staff also conducted 265 compliance inspections on permits issued by VMRC and local wetlands boards. Nine notices to comply were issued during the period.

The Habitat Management Staff completed actions on 1,118 applications received during the period. Action on most applications was completed within 90 days after they were received. As such, a number of the actions taken during the period were for applications received prior to April 2019. Similarly, those applications received near the end of the current reporting period are still under review. Habitat Management Staff also participated in the inter-agency review process involving general permits for Virginia Department of Transportation projects.

In addition to staff actions, the Full Commission considered 41 projects. During the reporting period the Commission considered 15 protested projects or projects requiring a staff briefing. The Commission also approved 20 projects over \$500,000.00 in value. Six (6) after-the-fact projects were approved as consent agenda items.

During the reporting period local wetland boards throughout Tidewater Virginia acted on 225 projects involving tidal wetlands. Of this total, 188 were approved as proposed, 26 were approved as modified, 3 were denied, 2 are pending, 3 were inactivated, 3 no permit was required, and 42 required compensation either on or off site (17), or through payment of an in lieu fee (25) accounting for 25,709 square feet of tidal wetland impacts.

b) VMRC – Fisheries Management Division

At the April 2019 meeting, the agency adopted emergency amendments that eliminated the Bay, Coastal and Potomac River Tributaries Spring Trophy-size striped bass recreational fisheries. The agency also adopted amendments that established the May 1, 2019 through April 30, 2020 commercial spiny dogfish landings quota as 2,215,484 pounds, as well as the 2019 Virginia commercial bluefish quota as 915,857 pounds. At the same meeting, the agency adopted amendments for black sea bass that the 2019 open recreational black sea bass season be from May 15 through 31, and June 22 through December 31.

At the May 2019 meeting, the agency adopted final amendments to the striped bass regulation that eliminated the Bay, Coastal and Potomac River Tributaries Spring Trophy-size striped bass recreational fisheries.

At the August 2019 meeting, the agency established emergency amendments to the striped bass regulation that lowered the recreational possession limit in the Chesapeake Bay area from two fish to one fish and established

commercial maximum mesh size requirements in the Chesapeake Bay and Coastal areas, as well as a 36" total length recreational maximum size limit.

At the September 2019 meeting, the agency adopted final amendments to the striped bass regulation that lowered the recreational possession limit in the Chesapeake Bay area from two fish to one fish and established commercial maximum mesh size requirements in the Chesapeake Bay and Coastal areas, as well as a 36" total length recreational maximum size limit. The agency also established emergency amendments to cobia that closed the commercial fishery on October 1, 2019. At the same meeting, the agency adopted amendments to the summer flounder regulation that created two fall periods. Period one is October 1 through November 15 with a 10,000-pound landing limit and period two is a 10,000-pound landing limit from November 16 through December 31 or until the quota has been met.

c) VMRC – Law Enforcement Division

Enforcement under "Other Agency" refers to summons issued for other agencies' laws, code or regulation sections. The majority of the summons in this category are for DGIF regulations on boating safety laws, expired boat registration, no life jackets, flares, etc.

Summons under "Police Powers" are all criminal vs fisheries. These are the reckless driving, drunk driving, driving without a license/suspended license, shoplifting, possession of controlled substances.

VIRGINIA MARINE POLICE ARRESTS/CONVICTIONS SUMMARY BY CATEGORY

REPORT FORMAT: FEDERAL FISCAL YEAR AREA: ALL AREAS
START PERIOD: 10/01/2014
END PERIOD: 09/30/2019



Category	2014/2015		2015/2016		2016/2017		2017/2018		2018/2019	
	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests	Convictions	Arrests
Buyers	5	6	2	2	1	4	1	1	0	3
Casting Garbage/Trash	1	1	3	3	2	2	0	0	0	0
Clams	2	3	3	3	1	1	1	1	0	0
Commercial Fishing License	7	10	21	30	13	16	12	15	7	8
Conchs	1	1	3	3	0	0	0	2	3	5
Crabs	121	138	71	104	68	89	26	34	50	58
Federal Violation	0	0	0	0	0	0	0	0	0	0
FIP Violations	76	81	47	48	41	42	36	37	24	25
Fish	150	163	168	197	193	216	130	147	167	184
Freshwater Fishing without a license	20	22	24	34	19	20	9	10	22	24
Gill Nets	17	24	13	27	20	34	2	5	3	5
Habitat/Wetlands	0	0	0	0	0	0	0	0	0	0
License Tags	1	1	4	9	0	2	0	0	0	0
Mandatory Reporting	9	18	10	20	2	11	0	0	0	0
Misc	0	0	0	0	0	0	0	0	0	0
Non-residents	0	0	0	0	1	1	0	0	0	0
NSSP	0	0	0	0	0	0	0	0	0	0
Other Agencies	383	462	285	343	364	440	477	598	352	431
Oysters	177	299	110	220	75	100	78	105	58	97
Piers	0	0	0	0	0	0	0	0	0	1
Police Powers	95	114	118	129	87	103	0	0	0	0
Removal of Obstructions	1	1	3	3	1	12	0	0	0	0
Resisting officer	0	0	0	0	1	1	0	0	0	0
Shellfish	14	25	7	8	10	16	0	0	0	0
SW Recreational Licenses	205	234	232	254	191	200	132	141	106	115
TOTALS:	1285	1603	1124	1437	1090	1310	904	1096	792	956
PERCENT OF CONVICTIONS:	80.16%		78.22%		83.21%		82.48%		82.85%	

3) VIRGINIA DEPARTMENT OF HEALTH (VDH)

a) VDH - Division of Shellfish Safety and Waterborne Hazards

From April 1, 2019 through September 30, 2019, the VDH Division of Shellfish Safety and Waterborne Hazards had...

585 acres of shellfish grounds formerly open year-round now closed to harvesting year-round,
1108 acres of shellfish grounds formerly closed year-round now open to harvesting year-round,
260 acres of shellfish grounds formerly open year-round now seasonally closed,
713 acres of shellfish grounds formerly closed year-round now seasonally opened,
991 acres of shellfish grounds formerly seasonally closed now closed year-round, and
306 acres of shellfish grounds formerly seasonally opened now opened year-round.

b) VDH - Division of Onsite Sewage and Water Services, Environmental Engineering and Marina Programs

Activities of the Virginia Department of Health for the Virginia Coastal Resources Management Report are summarized below. This includes statistics on applications for sanitary facilities at marinas and other places where boats are moored.

The Department received and reviewed a total of Thirteen (13) VMRC Permit Applications, and processed as follows:

One (1) Permit Applications needed action in the Marina Program.

Eleven (11) applications were approved based on meeting the requirements of providing adequate facilities of the Marina Regulations if applicable.

One (1) application was denied because of inadequate facilities.

4) Department of Conservation and Recreation (DCR)

a) DCR - Division of Soil and Water Conservation

Nutrient Management

DCR Nutrient Management Staff have been active in developing, reviewing nutrient management plans, enhancing private sector plan development, and other nutrient reduction activities to achieve the Commonwealth's nutrient reduction commitments of Chesapeake Bay TMDLs. In the coastal zones of Virginia, DCR staff have overseen the development of nutrient management plans covering 14,269.17 acres during the reporting period (4/1/2019 – 9/30/2019). Many plans are active for up to three years, all new or revised acreage developed in the coastal zones during the reporting period are summarized in the following table:

Table 1: Planned nutrient management acreage by land use and coastal management zones. Plans started between 4/1/2019 – 9/30/2019.

CZM Basin	Number Of Plans	CZM Crop Acres	CZM Hay Acres	CZM Pasture Acres	CZM Specialty Acres	Total
Atlantic Ocean	3	74.96	-	-	-	74.96
Chesapeake Bay Coastal	7	171.56	-	-	-	171.56
Chowan	1	2.94	-	-	-	2.94
James	2	768.48	90.53	37.47	-	896.48
Potomac	4	-	-	0.07	-	0.07
Rappahannock	4	7,083.67	-	-	-	7,083.67
York	9	5,602.18	194.39	241.98	0.93	6,039.49
Total:	30	13,703.79	284.92	279.52	0.93	14,269.17

Shoreline Erosion Advisory Service

DCR's Shoreline Erosion Advisory Service (SEAS) was created in 1980 by the Virginia General Assembly. The program provides technical assistance to private landowners and local, state, and federal agencies owning property that are experiencing shoreline or streambank erosion in Virginia. The SEAS services include: site investigations, written reports, plan reviews, construction inspections, permitting assistance, and education. Since its inception, SEAS has evaluated hundreds of miles of shoreline and provided invaluable technical assistance to thousands of Virginia property owners experiencing shoreline erosion.

For this reporting period, SEAS staff conducted 82 site visits, wrote 55 advisory reports, evaluated 36,010 feet of shoreline, and reviewed and provided comments on 4 joint permit applications. SEAS provides advisory assistance to tidal shorelines and non-tidal streambanks in Virginia. During a site visit, staff walks the shoreline with the owner and assesses the cause or causes of the erosion problem. The staff then review with the owner, what they believe are the most appropriate shoreline erosion control and protection strategies for that site. The options range from planting vegetation, to bank grading, to large rock structures such as riprap revetments and breakwaters.

The SEAS program is currently working with the Virginia Institute of Marine Science (VIMS), Virginia Marine Resources Commission (VMRC), and DEQ to 1) identify shoreline erosion stabilization projects across tidal Virginia that qualify for Chesapeake Bay TMDL WIP pollutant reduction credits, 2) verify these practices are installed and meet specifications set out by EPA's Chesapeake Bay Program, and 3) report these load reductions as part of the Commonwealth's efforts to meet WIP goals. The first round of these reductions was reported to DEQ in October 2017. An additional 163 sites have been verified and the associated sediment and nutrient reductions will be reported to DEQ in November 2019.

Protected Shoreline Length (ft.)	Protected Shoreline Length (miles)	Number of Sites
40,921	7.75	163

Pollutant	Total Reduction (lbs./year)	Total Reduction (tons/year)
TP	1,648.40	0.82
TN	2,331.80	1.17
TSS	8,040,773.20	4,020.40

b) DCR - Division of Natural Heritage

This report lists projects and activities conducted by the Department of Conservation and Recreation, Division of Natural Heritage (DCR-NH) during this period that were not funded by or otherwise reported to the VCZMP

Inventory

DCR-Natural Heritage Zoologists, supporting a study to assess the potential impacts of additional bike trails at First Landing State Park, have spent evenings in June, July and August of 2019 conducting bat inventories. Mist nets thus far have captured ~30 bats and total of five different species. Two of these were rare species, including the State Endangered Eastern big-eared bat (*Corynorhinus rafinesquii*), and the state rare Southeastern myotis (*Myotis austroriparius*). In fact, two female Eastern Big-eared bats were netted –the first females ever observed at First Landing. As one female was obviously lactating, both females were equipped with transmitters, which enabled the positive identification of a roost tree in the Park. Considering the significance of this observation, DCR-Natural Heritage staff will work to assess the numbers of individuals using this roost. Other species encountered were the Eastern red bat (*Lasiurus borealis*), Big brown bat (*Eptesicus fuscus*), and

Evening bat (*Nycticeius humeralis*). Coastal bat populations have taken on new significance in the wake of White Nose Syndrome, a fungus that has decimated populations of bats across North America. Bat surveys will continue through mid-August at the park, along with other surveys for rare species of plants and animals. This effort resulted in another record as well: the first time a bat mist net installation has been destroyed by a post-sunset biker. On the first night of sampling, despite on-trail signage warning of a mist net installed up ahead, a biker managed to speed by all signage, ripping through the net before having to slow down for DCR staff on the trail.



State Endangered Eastern big-eared bat (*Corynorhinus rafinesquii*) at First Landing State Park.

Prescribed Burning

During the period from mid-March to mid-April, DCR's Natural Heritage staff and fire management partners in eastern Virginia accomplished a considerable amount of their spring 2019 prescribed burning goals. Over 380 acres of fire-maintained habitat for rare plant and animal species were enhanced and/or maintained as a result of projects completed at three southeast Virginia natural area preserves: South Quay Sandhills, Antioch Pines, and Blackwater Ecological Preserve. In addition, Natural Heritage staff assisted with burn projects on 1,286 acres of conservation lands managed by DGIF, TNC, DOF and the USFWS. All told, a total of 1,669 acres were treated with fire by an increasingly efficient and effective eastern Virginia prescribed fire partnership.



Prescribed fire in southeast VA enhances habitat for fire-adapted species and maintains natural communities.

During the week of September 23-27, 2019, DCR's Southeast Region Natural Areas Stewards worked with a contractor to create and improve control lines to support prescribed burn operations at South Quay Sandhills Natural Area Preserve. Culverts were installed in strategic locations to allow fire apparatus to cross deep ditches, and existing control lines were cleared/improved to allow access by ATVs and UTVs. During the same period, staff used leased equipment to replace culverts in an especially sensitive part of the preserve, and to cut back overhanging vegetation on remote roads. These efforts are in preparation for upcoming prescribed burning to prepare sites for longleaf pine tree planting. Funding assistance for this work came from an Award of Domestic Grant with the Virginia Department of Forestry.



A contractor and leased equipment were used recently at South Quay Sandhills Natural Area Preserve to improve fire control lines in preparation for upcoming longleaf pine restoration prescribed burns.

On September 19, 2019 DCR Southeast Region Stewardship staff assisted Department of Game and Inland Fisheries (DGIF) fire managers with two prescribed burns totaling 258 acres at Big Woods Wildlife Management Area (WMA) in Sussex County. Interagency partners from DGIF, DCR, Department of Forestry, The Nature Conservancy and U.S. Fish and Wildlife Service conducted these burns. In addition, a Forest Ecology class from Virginia Commonwealth University (VCU) had been pre-arranged to be on-site and observe the prescribed burning process, which included a crew briefing and test-fire prior to main ignition operations. Darren Loomis, DCR Southeast Region Steward, met the VCU group earlier in the day at nearby Chub Sandhill Natural Area Preserve and gave a longleaf pine restoration tour. Darren then accompanied the group to Big Woods WMA, explaining basic operational prescribed burning procedures and ensuring students were able to observe from a safe distance.



Virginia interagency fire partners and VCU students participate in a burn crew briefing prior to beginning prescribed fire operations at Big Woods Wildlife Management Area.

Natural Area Preserve Stewardship

On Monday, April 22, 2019 volunteers from the newly formed Middle Peninsula Chapter of the Virginia Master Naturalists (MPMN), convened at Bethel Beach Natural Area Preserve (BBNAP) in Mathews County in celebration of Earth Day. In addition to spending several hours cleaning trash and washed-up debris from roadsides, ditches and shoreline within and near the preserve, they also assisted DCR's Chesapeake Bay Region Steward, Zach Bradford, with installing shoreline closure fencing to protect a nesting area for Least Terns (*Sterna antillarum*)(G4/S2B) – a rare colonial nesting shorebird in Virginia. The Virginia Master Naturalists, with 30 chapters across the Commonwealth, annually provide thousands of hours of volunteer support to Virginia Natural Area Preserves and State Parks. BBNAP receives heavy visitation, so current and future MPMN activities will assist DCR in maintaining a site presence and protecting habitat for rare plants and animals from inappropriate uses.



Volunteers from the Middle Peninsula Master Naturalists picking up trash at Bethel Beach Natural Area Preserve in Mathews County.

On May 3, 2019, DCR's Northern Region Supervisor Michael Lott helped lead a guided paddling trip for senior citizens on the Crow's Nest Water Trail, sponsored by the Stafford County Parks and Recreation Department. DCR and County staff assisted the seven participants in paddling the five-mile round trip along Accokeek Creek. Participants learned about the natural and cultural history of the Crow's Nest Peninsula and had excellent views of bald eagles and many other birds.



Guided trip participants saw bald eagles, water birds and other features of the Tidal Freshwater Marsh community on Accokeek Creek at Crow's Nest Natural Area Preserve.

During the period May 14-15, 2019, DCR's Longleaf Pine Restoration Specialist Rebecca Wilson and Southeast Region Steward Darren Loomis assisted Department of Forestry (DOF) staff in sowing seeds to produce the 2019 crop of native Virginia longleaf pine seedlings. Longleaf pine seeds originated from cones harvested by DCR and DOF staff and contractors in October 2018 from native Virginia longleaf pines at DCR's South Quay Sandhills Natural Area Preserve. Cones were then shipped to a state forest tree nursery in North Carolina for drying and seed extraction. Seeds were returned to DOF's Garland Gray Forestry Center in Sussex County and kept in cold storage until mid-May 2019, when members of the Virginia Longleaf Cooperators (DCR, DGIF, USFWS, TNC) assisted DOF staff with sowing individual longleaf pine seeds in specialized nursery trays. This process begins with a mechanized seed-sowing machine that first fills trays with planting soil, then sends them to a device that places one seed in each cell of the tray. Finally, a thin layer of sawdust is applied and each cell/seed is watered. However, the machine is not "foolproof" – hand labor is needed to ensure all cells are planted with seed. Thus, DCR and other partner staff were there, spending hours meticulously placing longleaf pine seeds into cells missed by the machine. Full seedling trays were then transported to DOF's outdoor, irrigated seedling production site where they will grow over the summer prior to planting at restoration sites in late fall and winter of 2019-20.



DCR Southeast Region Steward Darren Loomis adding longleaf pine seeds to planting cells missed by the planting machine at DOF's Garland Gray Forestry Center.

During the week of July 8-14, 2019, three separate university-sponsored field classes visited Savage Neck Dunes Natural Area Preserve (SNDNAP) on the Eastern Shore. Classes from both Shippensburg and Millersville universities in Pennsylvania, led by Dr. Sean Cornell and Dr. Brent Horton, respectively, focused on coastal environmental oceanography (shoreline erosion, water quality analysis, human impacts on coastal landforms) and behavioral ecology of birds, fish and invertebrates. Both universities are affiliated with the Chesapeake Bay Field Station based in Wallops, VA, which offers field support to a consortium of Pennsylvania state universities. A third class, led by Dr. Linda Blum (University of Virginia), Emily Boone (University of Richmond) and Alice Cook (artist), exposed teachers to the integration of art and science. DCR's Eastern Shore Region Steward, Dot Field, assisted with the class. Participants were given a tour of SNDNAP that focused on natural history and ecological concepts, followed by opportunities for Plein Aire drawing and instruction. State natural area preserves on the Eastern Shore are increasingly recognized by various institutions of higher learning as unique and attractive outdoor classroom sites.



Multiple universities have made use of Savage Neck Dunes Natural Area Preserve as an outdoor classroom during the summer of 2019.

In order to assess the impacts of deer on vegetative communities at Crow’s Nest Natural Area Preserve, DCR’s Northern Region stewardship staff began a series of monitoring initiatives in summer of 2017. Increased deer browse became evident in 2016, notably in Basic Mesic Forests and globally rare Coastal Plain Dry Calcareous Forests. Thus far, DCR staff have re-sampled vegetation plots established in 1999 and 2000, established five 0.5-mile-long deer browse transects, constructed seven 2m x 5m deer exclosures, and are completing a deer camera study – all with the objective of quantifying current levels of deer browse across the preserve and estimating current deer population density. This data will inform decisions and approaches for managing deer numbers, and establish baseline conditions to allow assessments of management efficacy.



Evidence of deer browse on glade fern (*Homalosorus pycnocarpus*) in a Basic Mesic Forest ravine at Crow’s Nest Natural Area Preserve. This species is rare in the Virginia coastal plain.

On September 11, Eastern Shore Region Steward, Dot Field, and Coastal Operations Steward, Richard Ayers, participated in an oil spill responsiveness simulation exercise. The exercise, led by the U. S. Coast Guard, Virginia Sector, included state, federal, and local agencies, local NGOs, and others with interests on Eastern Shore. The Department of Environmental Quality served as the lead for the state agencies. The exercise focused on potential impacts to the Atlantic barrier islands resulting from spills occurring in the Atlantic Ocean shipping channels. Field and Ayers were assigned to the “Environmental Unit” as advisors on natural resources that might be impacted by spilled oil or cleanup efforts. Ayers also served as a logistics advisor for barrier island access. Lessons learned from the exercise included 1) oil has the potential to impact the entire chain of barrier islands, the barrier island lagoon system, and the adjoining mainland shoreline; 2) Natural Heritage resources need to be more adequately accounted for, or incorporated into, the federal mapping applications that are regularly consulted by spill responders; 3) local “on the ground” and “time of year” knowledge of natural resources and access logistics is imperative to protecting Natural Heritage and other state resources. Positive

results from the exercise were 1) a better understanding by state agency staff about the oil spill response and cleanup processes; 2) shared contact information among participants that will enhance networking opportunities to design an improved response plan; and 3) the beginning of discussions to incorporate Natural Heritage data into the NOAA Environmental Response Management System (ERMA).



Eastern Shore Region Steward, Dot Field representing DCR-DNH during the Virginia Eastern Shore Oil Spill Responsiveness exercise held at the Eastern Shore Community College.

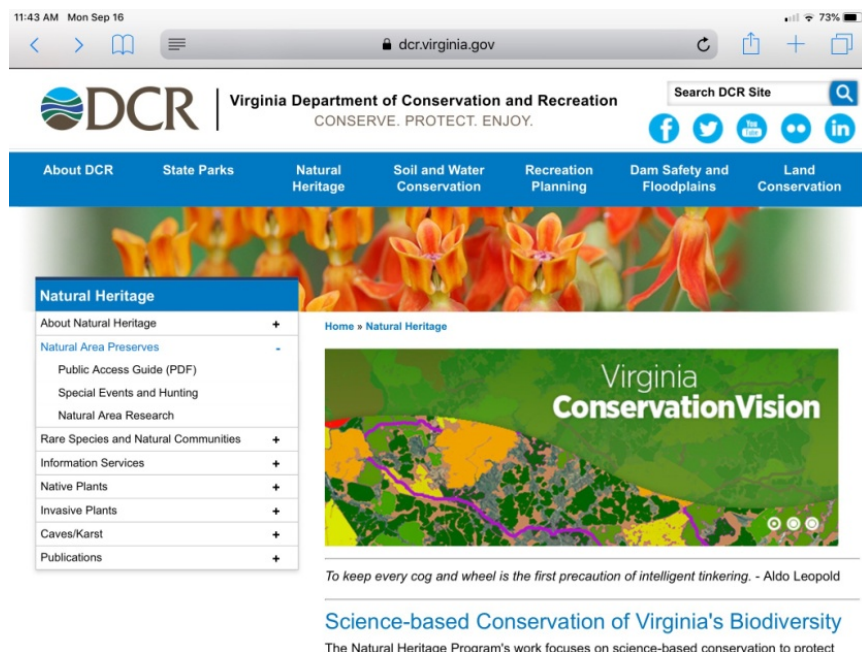
On September 14, 2019, Natural Areas Research Coordinator and Eastern Shore Region Steward, Dot Field, assisted with a field exercise for the University of Virginia Estuarine Ecology class. The class, led by Dr. Linda Blum, visited Wreck Island NAP to explore the biological and physical mechanisms that contribute to the ecological processes of barrier islands. The students explored the underlying geology and the vegetation patterns of the island and seined in the nearshore lagoon. Staff illustrated the adaptations of coastal plants to salt stress and low nutrient soils, and discussed the shorebird colonies that breed on the island in Summer. Dr. Blum is associated with the Virginia Coast Reserve Long Term Ecological Research site located in Oyster. Fourteen students were in the class.



Dot Field discussing shorebird colonies with UVA Ecology students.

Researchers who want to conduct research within the Virginia Natural Area Preserve System can now apply online for a “Research and Collection Permit”. The application was developed by DCR’s Web Developer, Andy Patel, with input from Natural Heritage Data Manager/GIS Specialist, Megan Rollins and Natural Areas Research Coordinator, Dot Field. Applicants can complete the application, attach pertinent files, and submit the package directly to the Research Coordinator and appropriate Regional Steward(s) for review. Once submitted, the system generates an automated email confirming the application has been received. Applicants can then

check the status of their application, upload any additional required documents and download their approved research permit. Permits and notice of approval can be stored on a mobile device for field access. All research applications, approved permits and accompanying materials are stored on-line and accessible to DNH Stewardship staff.



The new online Research and Collection Permit is available via the DCR website > Natural Heritage > Natural Area Preserves > Natural Area Research.

Invasive Species

In early May 2019, a 12-person contracted crew treated 75 acres at Chub Sandhill Natural Area Preserve to control Chinese lespedeza (also known as Sericea). The treatment area was DCR's initial longleaf pine restoration site, supporting 12-year-old longleaf planted in February of 2006. In the years since establishment, invasive lespedeza has become increasingly abundant, persisting and expanding under a frequent prescribed fire management regime. After the most recent prescribed burn conducted in February 2019, Chinese lespedeza was one of the first plants to emerge in early spring, making it an easy target for directed spray herbicide application. With nearly all native plant species still dormant, this targeted control effort was successful in avoiding damage to desirable native species. DCR Natural Heritage staff are closely monitoring treatment efficacy and after 1.5 months, control of Chinese lespedeza appears excellent and native plants are healthy and expanding within treated areas.



At left, a contracted crew applies herbicide to non-native Chinese lespedeza invading a 12-year-old longleaf pine restoration site at Chub Sandhill NAP. At right and six weeks post-treatment, lespedeza is dead or dying (brown) and native plants (green) are returning to areas previously dominated by lespedeza.

In late September 2019, DCR's Southeast Region Steward Darren Loomis worked closely with the DCR State Parks Resource Specialist to treat 67 acres of the invasive *Phragmites australis* (common reed) at the North Landing River and Northwest River Natural Area Preserves in the Cities of Virginia Beach and Chesapeake. The invasive, non-native form of *Phragmites* was introduced from Europe and has become a dominant plant species in many marshes along the U.S. east coast where it crowds out native vegetation and reduces plant community diversity and degrades wildlife habitat quality. Using a helicopter, a contracted aerial applicator treated infested portions of the preserves using a wetland-approved herbicide. Natural Heritage worked closely with State Parks to procure services of a single contractor in order to reduce per acre and administrative costs to accomplish this critical stewardship action on agency lands in southeast Virginia.



Contracted aerial applicator treats invasive *Phragmites* in wetlands of Northwest River Natural Area Preserve.

On September 19, a volunteer group of DCR staff participated in the quarterly Heritage Half Acre (HHA) work day. The goal for the work day included further reducing the invasive species dominating the James River Park in Richmond. While pulling invasive plants, staff also were able to note several native floodplain species within HHA including Jack in the Pulpit that have benefitted from the removal of invasive plant species.



Jack in the Pulpit (*Arisaema triphyllum*) in HHA (left) volunteers participating in the HHA Volunteer event (right)

Information Management

Virginia DCR Natural Heritage Program's Data and GIS Specialist served as a trainer for NatureServe's Core Methodology Training in Arlington, Virginia from April 23-26. Core Methodology Training (CMT) is a hands-on introduction to standards, methods, and tools that are integral to the success of the NatureServe Network. Training consisted of four days of presentations, discussions, and hands-on activities, including an afternoon collecting field data on a rare community and rare plant species at Turkey Run Park in McClean, Virginia. Sessions were held on species and ecosystem mapping and viability assessment, the use of NatureServe Network information, and challenges and opportunities in biodiversity conservation. Over 30 trainees from Natural Heritage Programs and Canadian Conservation Data Centres attended, representing 15 states (including Virginia), and 2 Canadian Provinces and a Territory. Core Methodology Training supports the consistent use of Natural Heritage standards and methods, and facilitates active partnership across the Network. Trainees gained a better understanding of the methodology behind their organizations' work, and how their local conservation efforts support the Natural Heritage Network to facilitate conservation impacts on a global scale.



Core Methodology Trainers at the field site in Turkey Run Park, McClean, Virginia. From left to right: Don Faber-Langendoen- Senior Research Ecologist (NatureServe), Wes Knapp- Mountains Botanist/Ecologist (North Carolina Natural Heritage Program), Chris Ludwig- Chief Biologist (Virginia Natural Heritage Program, Retired), Whitney Weber- DBA and Product Support Specialist (NatureServe) and Danielle Kulas, GIS and Data Specialist (Virginia Natural Heritage Program).

Outreach and Education

On April 20, 2019, Rene' Hypes, Natural Heritage Project Review Coordinator, participated in the Bioblitz Event at James River Park System (JRPS)-Reedy Creek. Families were encouraged to download the iNaturalist app on their phone as a way to collect species information observed in the park. Event activities included discovery hikes, making plant seed bombs and the building native bee houses. The Natural Heritage display included a collection of butterflies, moths and bees in an effort to increase pollinator awareness for individuals visiting the park. Park visitors also learned about the many benefits of planting native plants and how DCR and JRPS are working to battle invasive species. An invasive species removal effort was part of the event lead by Rob Evans, DCR Natural Areas Protection Manager.



DCR-DNH Bioblitz display

On April 9 and 10, 2019, Rene' Hypes, Project Review Coordinator participated in the Brightfields 2019 Virginia Conference at the Virginia Museum of History and Culture in Richmond, VA. The conference focus was the use of brownfields, already disturbed areas including mine reclamation areas, landfills and superfund sites for solar development (brightfields). During the opening keynote presentation Matt Strickler, Secretary of Natural Resources identified the many benefits of converting brownfields to brightfields in Virginia. The two-day solar conference included a session on “Brightfields for Bees, Butterflies and Better Pollination” with a presentation on the solar pollinator-smart work currently being done by Vanassee Hangen Brustlin (VHB) and partners through a DEQ contract. Deliverables of the contract will include the following: 1) The enhancement of the DCR native solar plant finder (<http://www.dcr.virginia.gov/natural-heritage/solar-site-native-plants-finder>) and the DCR solar pollinator/bird habitat scorecard (<http://www.dcr.virginia.gov/natural-heritage/document/va-solar-site-pollinator-bird-habitat-scorecard.pdf>) 2) the development of a manual for establishing native pollinator habitat on solar facilities with an associated monitoring plan and 3) the development of a business plan model to jumpstart a Virginia native seed industry. Through a Memorandum of Agreement with DEQ, DCR is providing technical assistance for this contract in the development and enhancement of these solar resource tools.



2019 VA Brightfields Conference-VHB Presentation on Ecologically Responsible and Pollinator-Smart VA Solar Industry

On April 18, 2019, the Natural Heritage Locality Liaison, Tyler Meader, participated in the Fort A.P. Hill Earth Day. Over 1,000 children and adults participated in the event. The Natural Heritage display had information and pictures of rare, threatened and endangered species found at Fort A.P. Hill and a live example of a natural heritage resource found on the base, the Northern pitcher plant (*Sarracenia purpurea*, G5/S2/NL/NL). The display also showcased some of Virginia's native bees, moths and butterflies. Visitors had an opportunity to hear about the Natural Heritage program, the Northern pitcher plant, and ongoing field inventory work to gain a better understanding of Virginia's native pollinator, their habitat needs and conservation status.



Tyler Meader, Natural Heritage Locality Liaison, at Fort A.P. Hill

On Sunday, April 28th, 2019, Zoology Lab Technicians, Megan Ayers and Tiffanie Pirault, attended an Earth Day event at Lake Barcroft in Fairfax County. The theme for the event was "Protect and Save all the Species" which was a perfect theme to showcase work underway at DCR-Natural Heritage with Virginia's pollinators. Staff used a display case of native bee species specimens, a DIY guide for constructing cavity nesting bee

homes, and other resources. Staff interpreted these hands-on resources to educate participants about Virginia's more than 450 native bee species and their natural history as pollinators of Virginia's native flora and agricultural crops. The Natural Heritage Zoology Team has been surveying native bees since 2014 to create a comprehensive list of these species in Virginia. This event was a great opportunity to show their efforts and raise awareness on the diversity of pollinators and the ecosystem service they provide.



DCR-Natural Heritage Zoologist Lab Technician, Tiffanie Pirault, at Lake Barcroft

On May 4, 2019, DCR's Southeast Region Steward Darren Loomis led a field trip for 16 members of the Historic Southside Chapter of the Virginia Master Naturalists (VMN) to Blackwater Ecological Preserve (BEP) in Isle of Wight County. This trip served as part of the training curriculum for new VMN participants who learned about the history of the preserve, longleaf pine, fire ecology and rare plants that occur at BEP – a state natural area preserve owned by Old Dominion University and managed in partnership with DCR. Students learned plant taxonomy skills and used a key to identify tree species. Staff from the Virginia Department of Forestry (DOF) assisted.



Master Naturalists listen as DOF Area Forester Scott Bachman explains the history of longleaf pine naval stores production in Virginia, which began in the 1600s. The ancient longleaf pine stump at photo center is one of the last vestiges of the original longleaf pine forest of southeastern Virginia.

On Friday, May 3, 2019, Zoology Lab Technicians Megan Ayers and Tiffanie Pirault attended an event at the Executive Mansion of Virginia during Historic Garden Week. This event was focused on encouraging bees and other pollinators in the backyard with the idea of planting native plants. Staff represented Natural Heritage's work with native bee surveys as they discussed identification tips for families of bees and how to promote native bee habitat. The Natural Heritage Program was vital to have at this event to supplement The Native Plant Society, Art Evans with "What's Bugging You?", Virginia State Parks, the State Apiarist, and a handful of other organizations to promote pollinator awareness. It was a great opportunity with our Richmond community to share the work DCR-Natural Heritage is doing throughout the Commonwealth.



DCR-Natural Heritage Zoologist Lab Technicians, Megan Ayers (left) and Tiffanie Pirault (right)

On Saturday, April 27, 2019, DCR-DNH Locality Liaison, Tyler Meader, participated in the Friends of the Lower Appomattox River (FOLAR) RiverFest outdoor festival at Appomattox Riverside Park in Petersburg. Over 1,000 people attended the event, and the Natural Heritage display showcased some local resources including a live Purple pitcher-plant (*Sarracenia purpurea*, G5/S2/NL/NL). Children and adults were educated about this carnivorous plant, which occurs in the Lower Appomattox watershed, as well as other natural heritage resources from the area. The booth featured activities for children, including giveaway coloring booklets that touch on many DCR programs. The booth also displayed information about the 50th Anniversary of the Scenic Rivers Program. A section of the Appomattox from the Lake Chesdin Dam to the confluence with the James River is designated as a scenic river.

On May 5, 2019, Rene' Hypes, Natural Heritage Project Review Coordinator participated in the "Go Wild" outreach event at the USFWS Rappahannock River Wildlife Refuge in Tappahannock. Families were encouraged to participate in tours of the wildlife refuge by tram and boat as well as visiting interactive booths. Children built bird houses, made duck callers and learned about the refuge wildlife by climbing into a replica of a Bald Eagle's nest. The Natural Heritage Program display at the event included a collection of butterflies, moths and bees in an effort to increase pollinator awareness. Event participants also learned about the many benefits of planting native plants and received information about building houses for bees. According to the event coordinator, this year's attendance was "the best turnout in the history of the event in spite of the weather".

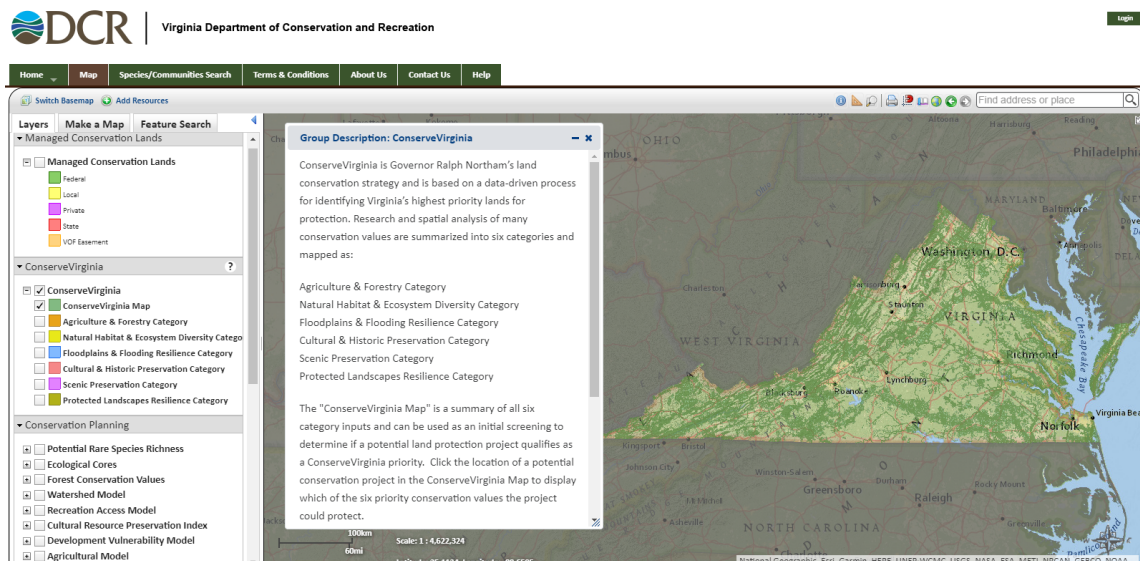


Natural Heritage Display at 2019“Go Wild” Event

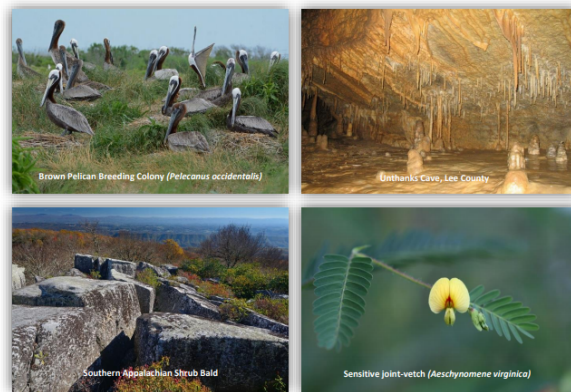


Eagle's Nest Replica

On May 20, 2019, the Natural Heritage Data Explorer (NHDE) (vanhde.org) was updated to Version 2.5. The NHDE, an interactive mapping site for conservation planning and environmental review, continues to provide key spatial datasets pertaining to existing Conservation Lands; various statewide conservation values via Virginia ConservationVision; and important reference information, including jurisdictional boundaries, watersheds, roads, streams and other water bodies. In addition to these publicly accessible maps and datasets, Version 2.5 includes Governor Northam's ConserveVirginia, a statewide “smart map” of Virginia's highest priority lands for conservation. A new statewide summary map of Potential Rare Species Richness is also available to the public. Subscribers to NHDE will notice a new Predicted Suitable Habitats Summary layer based on predicted suitable habitat models developed at DCR-Natural Heritage for all state and federally listed plant and animal species in the Commonwealth. Effective starting May 20, all projects submitted to DCR-Natural Heritage for environmental review will be reviewed using this new and refined dataset, resulting in more informed and more streamlined project review, to avoid and minimize impacts of development projects to Virginia's rare species, habitats and natural communities. The updated [NHDE user guide](#) describes the functionality of NHDE in full, including the Version 2.5 updates.



Publicly accessible Virginia Natural Heritage Data Explorer Version 2.5, with ConserveVirginia map displayed.



Cover page of the new Virginia Natural Heritage Data Explorer Users Guide.

Following a presentation from Deputy Secretary of Natural Resources, Ann Jennings, on the Chesapeake Bay Watershed Implementation Plan Phase 3, the DCR-Natural Heritage Healthy Waters Program Manager presented an overview of the Healthy Waters Program and ConserveVirginia, which is hosted on the newly updated NHDE. The HWP Manager described the process for identifying ecologically healthy aquatic sites and the program's challenges for implementation. The Criteria for Healthy Watershed Conservation was discussed as a tool that outlines the steps toward ensuring long term protection of Healthy Waters sites and compliments the EPA Nine Key Elements for Watershed Implementation Plans that are used for restoring impaired water bodies by DEQ.

On Saturday, June 8, 2019, DCR Natural Heritage Project Review Staff, Barbara Gregory, and new Project Review Intern, Brandon Gravett, presented a display on native pollinators at the Explore the Outdoors community event hosted by Community Idea Stations. The exhibit included display cases containing specimens of Virginia's native bees, moths, and butterflies. This display sparked conversations about threats to these important keystone species including DCR-Natural Heritage efforts to inventory the hundreds of native bee, moth, and butterfly species in Virginia. Brochures containing information on native plants were also provided as well as a pollinator craft for children. The Natural Heritage display also featured images highlighting the federally listed Rusty patched bumble bee (*Bombus affinis*). Many participants were unaware of this species' decline throughout its historic range. Despite the rain, more than 2,000 people and 50+ community partners attended, including VDEQ, VDGIF, and DCR-State Parks.



Brandon Gravett presenting the Natural Heritage Display at Huguenot Park

On June 20-21, 2019, DCR Natural Heritage Stewardship staff welcomed students taking the Fredericksburg Regional Governor's School Wetlands class to Crow's Nest Natural Area Preserve. The students are rising 7th graders attending many different schools in the Fredericksburg area. While at Crow's Nest, students learned about the human history of the Crow's Nest Peninsula, the protection efforts that led to the dedication of the preserve, and the ecological importance of and the ecosystem services provided by the freshwater tidal wetlands along Accokeek Creek. After this introduction, students took a two-hour paddle trip on the Crow's Nest Water Trail, co-led by DCR Natural Heritage staff. Walker Grant Middle School teachers and staff organized and taught the weeklong class. The Virginia Outdoors Center provided kayaks and paddling instruction. Approximately 32 students participated in each session. This was the third consecutive year the class has visited Crow's Nest.



Participants getting ready to paddle along Accokeek Creek at Crow's Nest.

On Saturday, June 22, 2019, Zoology Lab Technicians, Megan Ayers and Tiffanie Pirault attended the Bumblebee Jamboree event at Maymont in Richmond. This event marked the end of National Pollinator Week as it focused on native plants, native bees, other important pollinators such as butterflies, bats and hummingbirds. There was a constant stream of families visiting the Virginia Natural Heritage display interested to learn more about native bees, moths, butterflies and their contribution to ecosystems. The kids had a blast

crafting and coloring clothespin bees and left the table buzzing with joy! This event was a great way to engage with our community, make connections with our neighbors, and spread the word about conservation of native bees in our area!



Zoology Lab Technician Tiffanie Pirault providing information to visitors



DCR-Natural Heritage Zoology lab technicians Megan Ayers and Tiffanie Pirault with the Natural Heritage display

On September 18, 2019, the James River Advisory Council, James River Outdoor Coalition and the James River Association hosted a small, outdoor film event at the floodwall in downtown Richmond. The Natural Heritage Program used this as a public outreach opportunity to spread awareness about the program and its mission of conserving Virginia's biodiversity. Brandon Gravett, a Natural Heritage Project Review Assistant, represented the program and discussed a number of topics with individuals from the public, including some of the natural heritage resources found in the James River and public access to some of our natural area preserves. This event also served as an opportunity to distribute native plant brochures, natural area preserve access guides, and the Virginia Natural Heritage Rack Cards, which cover a variety of topics ranging from natural

community highlights to plant or animal species highlights. Visitors gained a greater appreciation for Virginia's biodiversity and the river that flows through their beloved City of Richmond.



Natural Heritage Display at the Films on the Floodwall Event

On August 26, 2019, Northern Regional Supervisor, Michael Lott, presented a lecture on ecological concepts to the Central Rappahannock Chapter of Virginia Master Naturalists. The class, held at the University of Mary Washington, focused on population growth and dynamics, interactions between species, energy movement in ecosystems, communities and food webs, element cycles and current issues in biodiversity. The presentation used examples and photographs from Crow's Nest Natural Area Preserve to illustrate many of the concepts. Members of the Chapter have been regular volunteers at the Preserve since 2012.



Photos of an Eastern Newt and a Red Fox taken at Crow's Nest Natural Area Preserve.

On September 19, 2019, DCR's Northern Region Stewardship staff provided a guided field trip to Crow's Nest Natural Area Preserve for members of the Stafford County Finance Department. The 12 county staff participants split into two groups, with one paddling the Crow's Nest Water Trail along Accokeek Creek and the second hiking the 3-mile Accokeek Loop Trail. While these county employees all work for Stafford County and many live nearby, none had previously visited the preserve. Participants learned about the human history of the Crow's Nest Peninsula, the conservation efforts that led to the dedication of the preserve and the ecological importance of Crow's Nest. Kayaks were provided by Stafford County Department of Parks and Recreation.

Since the beginning of DCR's efforts to protect and manage Crow's Nest NAP, Stafford County has been by far the state's most critical conservation partner – a collaboration that continues to this day.



Stafford County employee field trip participants hiked and paddled at Crow's Nest Natural Area Preserve.

On September 19, 2019, the Eastern Shore Chapter of the Virginia Master Naturalists held a field class for new trainees at Savage Neck Dunes NAP. Eastern Shore Region Steward, Dot Field, walked the class through the coastal natural communities, pointing out key vegetation, animal habitat and soil composition characteristics. Natural Areas Zoologist, Chris Hobson led the instruction on common insects, reptiles and amphibians, with the assistance of Coastal Operations Steward, Richard Ayers. Stewardship Biologist, Kevin Heffernan, discussed the impacts of invasive plants and efforts of various Commonwealth initiatives to combat them, including emphasizing native plant use in home landscaping and commercial enterprises such as solar farms. Twenty-two prospective Virginia Master Naturalists participated. Savage Neck Dunes NAP is one of three Eastern Shore NAPs utilized for field experiences during the training course.



Staff recover turtle traps and teach Master Naturalists at SNDNAP



Kevin Heffernan explaining the impacts of invasive plants to Master Naturalist trainees



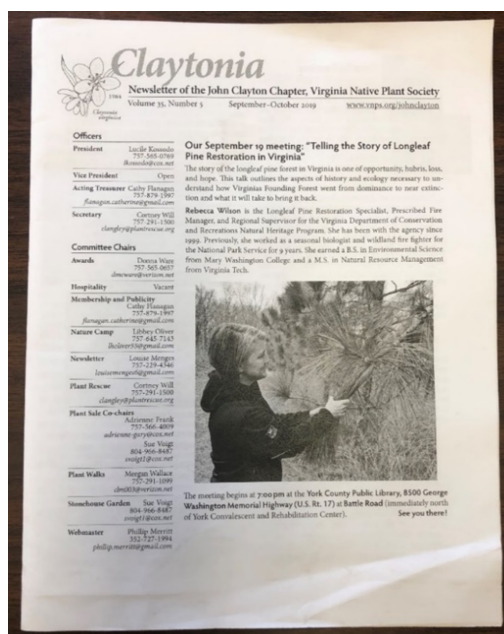
Staff teaching turtle biology at Savage Neck NAP.

On September 25 and 26, 2019, DCR-Natural Heritage Program staff visited the Ernst Conservation Seeds in Meadville, PA to gain a better understanding of the commercial plant seed industry emphasizing the growing of native pollinator plants. The wealth of information generously provided by the Ernst family and other Ernst employees during our visit to their production fields and processing facility will inform the efforts of DCR, DEQ and other partners to jump-start a native plant industry in Virginia. DCR staff gained a better understanding of the specific strategies and harvesting techniques for various native species among the approximately 10,000 acres owned or leased by Ernst Conservation Seeds for various state native plant ecotypes. The pollinator-smart initiative is part of an overall contract funded through the solar development Coastal Avian Protection Zone Research Fund to encourage the establishment of native pollinator and bird habitat on solar facilities in Virginia. Upon seeing the Ernst operation and based on the Pollinator-Smart Business Plan, it was decided that Virginia would pursue the development of VA ecotype seed stock through collection and grow-out efforts over the next three years with the goal of providing native seed to farmers. This native seed would then be grown and harvested by Virginia farmers in Virginia shipping the lightly processed seed to Ernst for final processing into commercially marketable native seed.



DCR-Natural Heritage staff learn about the logistics of harvesting seed and rearing Virginia ecotype native pollinator-friendly plant species.

On September 12, 2019, Rebecca Wilson, DCR Longleaf Pine Restoration Specialist gave a presentation at the monthly meeting of the Virginia Master Gardeners Norfolk Chapter. With about 50 in attendance, Rebecca's talk entitled "The Story of Longleaf Pine in Virginia" outlined how Virginia's Founding Forest declined from landscape dominance in 1607 to near extinction by 1850. Information was also provided on the status of current longleaf pine restoration efforts in Virginia. This presentation was also given on September 19 to the John Clayton Chapter of the Virginia Native Plant Society (VNPS) at the public library in Yorktown, VA. Approximately 20 members attended as well as several others whose interest was piqued by a July 2019 article in the Virginia Pilot entitled "Virginia's 'Founding Forest' was decimated - Now the longleaf pine is making a comeback". Rebecca has presented this talk several times in 2019 – at the VNPS Winter Workshop (~120 attendees) and Tidewater Chapter of the Virginia Master Naturalists (~50 attendees) in March 2019; and, to the Northern Neck Chapter of VNPS (~75 attendees) in June. This talk will next be presented to the Charlottesville Area Tree Stewards in November.



"Telling the Story of Longleaf Pine Restoration in Virginia" in Clayton Chapter of VNPS Newsletter.

On September 26, 2019, DCR's Chesapeake Bay Region Steward Zach Bradford gave a talk about Virginia's native orchids to 20 members of the Thomas Jefferson Garden Club. The presentation introduced attendees to Virginia's 62 native orchid species with an emphasis on the 27 species listed as rare and tracked by DCR's Natural Heritage Program. Threats including habitat destruction, fire suppression, and invasive species were discussed. The presentation closed with a peek at a few species that occur in neighboring states, and that may occur in Virginia, but thus far have been undetected.



Early coralroot (*Corallorhiza trifida*), a boreal orchid species first found in Virginia in 2015 in Nelson County. Note aphid on upper flower for scale

Land Conservation

On May 1, 2019, a dedication event was held at Crow's Nest Natural Area Preserve to celebrate the addition of the Northern Virginia Conservation Trust's (NVCT) Potomac Creek Heronry property to Crow's Nest Natural Area Preserve. The 70-acre NVCT-owned tract protects one of the largest Great Blue Heronry heronries in the Upper Chesapeake Bay, with 200 to 300 nests counted annually. NVCT received this parcel in 1999 as mitigation for the loss of wetlands resulting from the construction of the Stafford County Airport. The addition of the heronry tract to Crow's Nest expands the preserve to 2,942 acres. This event – organized collaboratively by NVCT, DCR and Stafford County staff – also celebrated the continuing effective partnership to protect additional land on the Crow's Nest Peninsula. Event speakers included NVCT Executive Director Alan Rowsome, Stafford County Board of Supervisors Chairman Gary Snellings, Delegate Bob Thomas, Virginia Secretary of Natural Resources Matt Strickler and DCR Deputy Director of Operations Tom Smith. After the ceremony, attendees hiked the 3-mile Accokeek Creek Loop Trail.



At left, Secretary of Natural Resources Matthew Strickler presents remarks. At right, NVCT, DCR and Stafford County representatives cut the ceremonial ribbon to commemorate the addition of the Potomac Creek Heronry tract to Crow's Nest Natural Area Preserve.

The southern tip of Northampton County on the Eastern Shore is Virginia's only Natural Heritage conservation site that is mapped for its extreme migratory bird stopover habitat importance. Beginning in the early 1990's, research funded by the Virginia Coastal Zone Management Program, documented that this region supports one of the largest concentration of landbirds along the Atlantic Coast. An estimated five to six million neotropical land birds and 10 to 12 million temperate land birds pass through the Southern Tip during their fall migration, representing approximately 70 percent of all breeding bird species in North America. Not surprisingly, the Virginia Coastal Zone Management Program's Geospatial and Educational Mapping System (Coastal GEMS), considers the area to have international importance.

In 2006, the DCR-Natural Heritage Program established the Magothy Bay Natural Area Preserve to help restore and protect migratory bird habitat within this mapped conservation site. DCR's commitment to this resource continues, with the acquisition of an additional 106 acres on May 1. The tract includes two separate patches of mature pine-hardwood forests (already high-quality bird habitat), and the remainder will be managed to restore native vegetation, thereby increasing the abundance of high-value food for resident and migrating birds on the property. Such acquisition and restoration efforts may be timelier than ever; a recent study out of the University of Delaware has shown a 29% total decline in bird density between 2008 and 2014, with "particularly noticeable" declines in Virginia.

The acquisitions required willing and patient landowners, and utilized funds from both the Virginia Land Conservation Foundation (VLCF) and the Virginia Coastal Zone Management Program, in the Department of Environmental Quality.

Natural Heritage Data Management Totals for FY2019:

Activity 4-1-2019 – 9-30-19

New Mapped Locations (EOs) – 12
Updated Mapped Locations (EOs) - 3
New Conservation Sites – 46
Updated Conservation Sites – 14

Total Number in Database 9-30-19:

Animal Mapped Locations (EOs) – 619
Plant Mapped Locations (EOs) – 1265
Community Mapped Locations – 647
Conservation Sites – 662

Managed Areas: (Acres added 4-1-2019 - 9-30-2019) – 9,711.84 Acres
Mapped Tracts: (total in coastal zone) – 4,813 Tracts
Mapped Managed Areas: (total in coastal zone) - 3,337 Managed Areas

Healthy Waters

For the grant reporting period, the Environmental Scientist/Analyst with the Virginia Commonwealth University, Center for Environmental Studies in the Department of Life Sciences continued to serve as the Program Manager of the Virginia Healthy Waters Program at the Virginia Department of Conservation and Recreation, Division of Natural Heritage.

The Healthy Waters Program is supported through funding from several grant sources including the VA CZM Section 306, US EPA Section 319 Nonpoint Source Program, and the Chesapeake Bay Implementation Grant. These sources fund various aspects of the Program including the administration and oversight, Program growth and expansion, improvement in capacity, acquisition and analysis of new data and data integration.

Programmatically, data integration, geographic expansion and data re-sampling continue to be the top focal areas of the analysis with immediate attention addressed to integrate existing INSTAR data into the DNH data explorer and the creation of new Ecological Occurrences (EOs) and Stream Conservation Units (SCUs). Despite the diverse funding, the HWP continues to have challenges administering the Program in such areas as development of new data to complete the statewide coverage, and the resource and staffing needs to conduct field assessments. This reporting cycle did not include Heritage staff with the VCU field crew to collect INSTAR data. However, this increased capacity in the program advances the program within the Division of Natural Heritage.

Ongoing discussions evaluating the long-term funding for the HWP had been one of the foci during the reporting period. While a diverse funding pool, the allocation and identification of outcomes for each was undertaken with effort shared by DEQ and DCR. Meetings with senior and staff level management were executed to outline EPA funding for FY 17, 18 and 19. Project descriptions for each were developed identifying how they directly interrelate to the CZM funding and a programmatic direction for continuing the effort of identifying and outlining a process to ensure HWs exist into the future.

The Program Manager continued to advance Healthy Waters Bay Agreement Goal of 100% protecting the 2014 HW sites in the Chesapeake Bay by 2025. Working with NHP staff, continued analysis to develop and refine the prioritizing of statewide SCUs and the vulnerability assessment of existing healthy water sites has continued and bridges the DNH Sections of Healthy Waters, Protection and Stewardship. The process has broadened the consideration of the identification of SCUs and the suggested protection area. The analysis and prioritization of the SCUs are to result in an identification of those SCUs deemed “most valuable” to guide conservation planning on a watershed scale ensuring ecologically healthy aquatic conditions are maintained. Conservation planning on a watershed basis would be a divergent from the opportunistic approach under which some conservation actions are achieved. Coordination with DCR and VCU began develop the justifiable background for advancing conservation actions and expanded to invite DEQ but more formally once the framework was established.

The HWP Manager continued to staff the HW Goal team remaining consistent on the process for prioritizing HW sites for the outcome outlined above. The GIT is advancing a regional modeled approach for prioritizing those areas for conservation, sharing State provided data with the intent of directing actions to protect lands. This outcome will provide the basis for guiding how the Commonwealth advances conservation but will not likely be used as more than suggestions since Virginia will be advancing an approach that integrates the proximity to terrestrial features in the weighting. The newly released ConserveVirginia was integrated into the Governor’s position on the environment and the HWP Manager is working to further integrate the Watershed Model and GIT outcome into those priorities.

The HWP Manager assisted the NHP Project Review Team with two projects that were associated with HW sites: NF Parker Creek, on the Eastern Shore and Parker Branch, a tributary of the Assamoosick, a black-water system. The uniqueness of the Eastern Shore site was that it contained several freshwater fishes that are not zoogeographically associated with eastern shore and may be possible glacial relicts as well as the first Virginia record mostly tropical estuarine fish. For the black-water stream in the Assamoosick, a culvert replacement was proposed and comments were provided to minimize disturbance and consider a box or bottomless arch culvert to ensure the natural channel was maintained.

The HWP Manager was requested by the NHP Project Review Section Manager to provide comment on stream research areas for an upcoming RFP. Guidance was shared to target those areas that have been identified as part of the HWP and that pre and post construction restoration monitoring be considered to evaluate if the pre-conditions maintain the HWP characterizations. Additionally, the Program Manager partnered with the NHP Data Management Section to submit a proposal to the River Management Society on the outcome of the conservation priorities and SCU identification process.

The DEQ Nonpoint Section requested the HWP Manager and NHP Management to attend the EPA Programmatic review of Nonpoint Source Program to provide an update on the implementation of the HWP in Virginia and long-term sustainability and goals. Faculty from VCU also attended to provide support and reference the field data collection process that informs the development of EOs and SCUs for NHP. EPA was pleased with the support and presentations indicating ongoing support of the program meeting the Commonwealth's protection goals under the Clean Water Act despite having rigorous standards under the Antidegradation Rule.

c) DCR – Planning and Recreational Resources

On May 15, 2019, PRR held the annual Technical Advisory Committee meeting (TAC) for the newly published Virginia Outdoors Plan and ConserveVirginia and discussed outdoor recreation trends including future state wide recreation needs and strategies for future recreation access throughout the state.

5) Department of Game and Inland Fisheries (DGIF)

I. Wetlands:

1. Mitigation Banking:

VDGIF continues to participate on the Inter-Agency Review Team that oversees stream and wetland mitigation banking and provide input on new banks all over Virginia, including the coastal zone. Numerous proposals have been made for new banks and/or additions to existing banks within the coastal region of Virginia during this reporting cycle. DGIF is also now part of the IRT overseeing the Virginia Aquatic Resources Trust Fund projects. Only one new tidal mitigation bank has been proposed during this reporting cycle.

II. Nongame Species Monitoring and Research:

1. Nongame Birds:

a. Bald Eagles

Bald Eagle populations have increased dramatically over the past 30 years across North America. The Chesapeake Bay Region (CBR), which houses one of the densest populations of Bald Eagles in North America, has experienced nearly a 20-fold increase of breeding pairs of Bald Eagles, since the 1970s. Two of the most pressing management issues wildlife agencies face in the Mid-Atlantic region are: 1) eagle collisions with military and civilian aircraft and 2) the potential negative impacts that commercial wind facilities may have on eagles due to strikes with turbines. Both of these issues are important to human safety and economic development, as well as conservation of Virginia's natural resources. In addition, although bald eagle populations have recovered, human activity still impacts them and it is important to understand the scope and consequences of these impacts to eagles.

Air-strike: Currently, DGIF, USDA-WS, and numerous airports and military Air Stations are dealing with ongoing efforts to reduce the risk of air- strikes with eagles. Although, none of these bird strikes has led to human fatalities, the risk is always present and the economic damage is significant. Due to a lack of scientific

information concerning ranging behavior and flight characteristics of Bald Eagles, scientifically sound management recommendations are, at present, challenging to make or implement. To assist with this problem, we are continuing a project to acquire information that will enable wildlife managers the ability to make sound and scientifically based decisions to abate air-strikes with Bald Eagles.

To date, DGIF biologists have telemetered approximately 120 Bald Eagles of every age class. Among the roughly 120 individuals tagged, DGIF has documented greater than 6 million GPS locations. This year a paper based on DGIF's research has been published in the Journal of Wildlife Management titled "*Implications for Bird Aircraft Strike Hazard*" that focused on BASH of dispersing Bald Eagle fledglings. Moreover, although DGIF completed its initial research project with West Virginia University, DGIF is continuing its investigations of air-strike to better inform BASH programs. DGIF is currently working with Conservation Science Global and Dr. Todd Katzner (USGS) on model development and threat assessment. DGIF deployed 4 additional transmitters on nestling eagles during April 2019 at the following locations: Cobb Island, Wreck Island, Richmond International Airport, and Quantico Marine Corp Base. Further, DGIF has approximately 12 to 14 cellular transmitter to be deployed during the 2019-20 field seasons. DGIF anticipates deployment of these transmitters in and around Langley Air Force Base to investigate viable management options for reducing BASH of Bald Eagles at this air station.

b. Avian scavengers

Lead has, for several millennia, been recognized as dangerous to humans. More recently, lead has also proven to be toxic to wildlife. Wildlife exposure to lead usually results in either lethal or demographically consequential sub-lethal effects, including changes in behavior, reproductive output, and long-term survivorship. Thus, there is a need both to determine the degree to which lead from spent bullets is entering the ecosystem and to understand the threats that lead presents to wildlife and to people.

During 2018 – 2019, Vince Slabe completed his dissertation and PhD requirements at West Virginia University, which was primarily funded by the VDGIF. His dissertation was titled "*Lead Exposure of North American Raptors*" and focuses on the Chesapeake Bay region.

A copy of the full dissertation is attached or can be found at the following link (<https://researchrepository.wvu.edu/etd/4037/>).

Peer-reviewed publications resulting from this research:

Franzen-Klein, D., D. McRuer, V.A. Slabe & T. Katzner. 2017. The use of lead isotope analysis to identify potential sources of lead toxicosis in a juvenile bald eagle (*Haliaeetus leucocephalus*) with numerous ventricular foreign bodies. Journal of Avian Medicine and Surgery. *In press*.

Katzner, TE, MJ Stuber, VA Slabe, JT Anderson, JL Cooper, LL Rhea & BA Millsap. 2018. Origins of lead in populations of raptors. Animal Conservation. *In review*.

Conference Presentations & Sessions Organized

Session organizers: Lead and Raptors. Annual Meeting of the Raptor Research Foundation. Cape May, NJ, USA.

Slabe, V.A., J. Cooper, D. McRuer & T.Katzner. 2016. Blood lead levels of piscivorous raptors in the coastal plain of Virginia. Raptor Research Foundation Annual Conference. Cape May, NJ. Oral presentation.

c. Osprey

Due to the continued expansion and growth of the Osprey population throughout Virginia, and greater than 90% of nests being placed on man-made structures, conflicts between Osprey and humans has increased significantly over the past decade. In an effort to handle and manage this conflict, DGIF revised and updated the DGIF Guide

to Osprey Management in Virginia. Currently in a draft form, this expanded and revised guide attempts to give consistent guidance related to federal and state laws protecting Osprey, permitting issues related to nest removal and relocation, and Best Management Practices for individuals working near Osprey nests. The final draft and publication of this document on the DGIF website is anticipated to occur during the fall of 2019.

d. Piping Plovers and Wilson's Plovers

The 34th Annual Virginia Plover Survey (VPS) was conducted from June 1 - 9, 2019 to obtain statewide breeding population estimates for the federally threatened piping plover (*Charadrius melodus*) and the state endangered Wilson's plover (*Charadrius wilsonia*). VPS participants examined all suitable nesting habitats shared by both species of plovers in coastal Virginia. It should be noted, a new beach, approximately 0.5 km in length, formed during the winter of 2017/2018 on the marsh headland of Gargatha Inlet located between Assawoman and Metompkin islands (hereafter referred to as Gargatha Beach). Several species of beach nesting birds occupied the site in 2018 and again in 2019, including piping plovers, Wilson's plovers, American oystercatcher (*Haematopus palliatus*) and least terns (*Sterna antillarum*).

A preliminary total of 192 piping plover breeding pairs were observed during the 2019 survey. This year's survey pair total reflects a 9% decrease over last year's total of 212 pairs. Breeding distribution did not change in 2019; all pairs were confined to the barrier islands (Assateague Island to Fisherman Island) with the majority of birds occurring on the northern half of the island chain (Assateague Island to Cedar Island). The preliminary 2019 end-of-season piping plover breeding pair total, which includes additional pairs discovered after the breeding survey was 233, which is a 3% increase from last year's end-of-season total of 227 pairs.

A total of 26 Wilson's plover breeding pairs were recorded during the 2019 VPS, a 33% decrease from last year's VPS total of 39 pairs. The end-of-season total of 33 pairs reflects a 15% decrease from last year's final total of 40 pairs. Wilson's plover breeding activity was confined to four northern barrier islands and Gargatha Beach. Prior to 2006, up to 25% of the state's breeding population was reported on the southern islands (Parramore Island - Fisherman Island; DGIF unpubl. data). It is not clear why Wilson's plovers have remained absent from the southern islands since then.

Plover Breeding Productivity: Staff from the DGIF, The Nature Conservancy's Virginia Coast Reserve (VCR), Chincoteague National Wildlife Refuge (CNWR), Wallops Flight Facility and Fisherman Island NWR (FINWR) monitored the breeding success of 94% (n = 219 pairs) of Virginia's piping plover breeding population in 2019. This year's preliminary statewide productivity estimate was 0.72 fledged young per pair, slightly below last year's estimate of 0.76 fledged young per pair and below the value (0.93 fledged young per pair) necessary to maintain a stable population in the Atlantic Coast Southern Recovery Unit (Delaware – North Carolina).

The staff from the DGIF and CNWR monitored the breeding success of 88% of Virginia's 2019 Wilson's plover breeding population. A total of 44 young fledged among the 29 pairs monitored which yielded a productivity estimate of 1.52 fledged young per pair. This year's productivity estimate is well above the previous two years' estimates, which were below one fledged chick per monitored pair.

e. Annual Atlantic Coast Least Tern Survey

In 2019, DGIF staff coordinated the 15th annual Atlantic coast least tern (*Sterna antillarum*) breeding survey in Virginia, an effort which began in 2006. The least tern is ranked as a Tier III Species of Greatest Conservation Need in the VA Wildlife Action Plan. The survey window for the southern Mid-Atlantic States (MD – NC) is June 1 – 15. Least terns are one of the more difficult seabird species for which to obtain accurate breeding population estimates. They are highly ephemeral (abandon one site in favor of another often several times during a single breeding season), patchy in distribution within colonies, and eggs are small and well-camouflaged making them difficult to see. Thus, the information gathered by participating Atlantic coast states are viewed as trend data rather than actual population estimates and efforts are made by the states to maintain a similar level of effort from year to year within in the survey window. Several methods have been used to survey least terns; however, results

from a study examining the accuracy and precision of each of these techniques suggested that incubating adult counts yield the most accurate estimates with the least amount of disturbance to the birds (Matthew D. Hillman, pers. comm.) As such, Virginia survey participants continue to use this method at most colonies.

Through the combined efforts of the DGIF, VCR, CNWR, and FINWR, DGIF obtained an estimate of 979 least tern breeding pairs in 54 colonies. This preliminary estimate represents a 3% decrease from last year's total of 1,009 pairs. Eighty-eight percent of breeding pairs (n = 862) occurred on Virginia's barrier islands, 11% (n = 110 pairs) occurred at Craney Island Dredge Material Management Area in Portsmouth, VA and 1% (n = 7 pairs) nested on shell deposited on a marsh headland near Wachapreague Inlet. This was the first year no colonies were reported on the western shore of the Chesapeake Bay likely due to the persistent erosion and frequent flooding of shorelines and islands previously occupied by the terns. The rooftop breeding sites at Lynnhaven and Patrick Henry malls in Virginia Beach, VA and Newport News, VA, respectively, are no longer suitable because both have been resurfaced with white polyvinyl roofing material. The least tern colony that occupied a rooftop at Langley Airforce Base in Hampton, VA the past two years was not active in 2019.

f. American Oystercatcher Productivity Studies in the Seaside Marshes and Barrier Islands

American oystercatcher productivity has been monitored at varying sites and at varying degrees of intensity along the Virginia barrier islands and in the seaside marshes since 2001. Oystercatchers are listed as a Tier II SGCN in VA's Wildlife Action Plan. In 2019, DGIF staff conducted productivity studies in the following two areas within the seaside lagoon system seaward of the lower Delmarva Peninsula: (1) the marshes east of the town of Wachapreague, including a sand shoal in Wachapreague Inlet (Wachapreague Route); and (2) the marshes east of the town of Quinby (Quinby Route). On the Wachapreague Route we monitored a total of 27 pairs, which produced a total of 21 fledged young and yielded a productivity estimate of 0.78 fledged young per pair, which is well above level required (0.36 fledged young per pair) to maintain a growing population. On the Quinby Route we monitored 28 pairs and documented 17 fledged young for a productivity estimate of 0.61 fledged young per pair. Department staff also conducted productivity studies on two barrier islands (Mink and Myrtle islands) and on the marsh headland Gargatha Beach located in Gargatha Inlet between Assawoman and Metompkin islands. We monitored five pairs on Mink Island, 20 pairs on Myrtle Island and 2 pairs on Gargatha Beach. Preliminary productivity estimates (number of fledged young per monitored pair) for the three sites were 1.60, 1.20 and 0.00, respectively.

g. 2018 Coast-wide American Oystercatcher Breeding Survey

During the previous fall CZM reporting period, the DGIF and VCR coordinated Virginia's fourth coast-wide American oystercatcher breeding survey. Previous surveys were conducted in 2003, 2008 and 2013 in conjunction with Virginia's coast-wide colonial waterbird breeding surveys. Final results from the 2018 coast-wide survey were still pending at the time of the writing of last year's report, therefore we present them below.

2018 breeding surveys were conducted primarily by staff from the VCR, DGIF, CNWR, Wallop's Flight Facility, FINWR and the Center for Conservation Biology (CCB) across four geographic areas: barrier islands; seaside lagoon system; Chesapeake Bay – Eastern Shore; and Chesapeake Bay – Western Shore. DGIF staff alone surveyed over 20 islands, marshes and shorelines from April 15 – June 15. The number of estimated breeding pairs in 2018 rose by 13% since 2013 and most of the increase occurred on the barrier islands and the seaside lagoon system (both seaward of the lower Delmarva Peninsula) where the greatest proportion of Virginia's oystercatcher breeding population resides. The barrier islands, which consistently support over 50% of the state's breeding pairs, exhibited steady increases between 2003 and 2018. This may be due to the fact that the barrier islands are far less susceptible to frequent tidal inundation and flooding relative to the other areas, especially the Chesapeake Bay Eastern Shore region where the islands and marshes are rapidly eroding and subsiding due to sea level rise, wave action and fetch. DGIF surmises that may be one reason why the Chesapeake Bay Eastern Shore was the only area that experienced a decline in breeding pairs in 2018.

h. 2018 Coast-wide Colonial Waterbird Survey

Virginia's fifth coast-wide colonial Waterbird (CWB) survey was conducted during the 2018 reporting period. Because survey results were still pending at the time of the writing of last year's report, DGIF presents them here.

In the fall of 1992, a consortium of agencies and individuals agreed that a comprehensive monitoring program for the Virginia CWB community was needed and that assessments should be made every 10 years for trend analyses. Following the 2003 survey, the same consortium agreed the survey intervals should be shortened to every five years to increase the accuracy of the trend analyses. Past surveys (i.e., 1993, 2003, 2008 and 2013) systematically covered all 24 species of CWBs throughout the Coastal Plain of Virginia. The primary objective of all coast-wide CWB surveys is to generate population estimates for colonial waterbird species currently nesting on the Coastal Plain of Virginia. A secondary objective is to produce map coverages for all colonies of waterbirds within the Coastal Plain. Taken together, these two products have and will continue to allow for the assessment of status and distribution for all colonial nesters in the eastern portion of the state. The comparison of the 2018 survey to the 1993, 2003, 2008 and 2013 surveys will allow for an evaluation of trends. It should be noted that all Great Blue Herons and extensive colonies of Great Egrets located along the coastal plain's major river systems were excluded from the 2018 survey to reduce the high costs associated with conducting aerial surveys over a large geographic area. Both species received complete coverage in 2013 and this level coverage will be repeated in 2023.

The 2018 VA CWB survey team was comprised of several partners including the Center for Conservation Biology (CCB), DGIF, VCR, Eastern Shore of Virginia NWR and CNWR. As with previous coast wide surveys, the DGIF used Wildlife Restoration Program funds to contract with the CCB to: (1) conduct a single extensive aerial survey during the early stages of the breeding season to direct ground surveys; (2) conduct aerial surveys of laughing gull (*Leucophaeus atricilla*) and Forster's tern (*Sterna forsteri*) colonies located in inaccessible marshes; (3) conduct aerial surveys of double-crested cormorant (*Phalacrocorax auritus*) and brown pelican (*Pelecanus occidentalis*) colonies too large to survey on the ground; (4) conduct ground surveys of urban wading bird colonies in the Hampton Roads area; (5) compile, proof, enter and summarize all data collected by CCB staff and cooperating partners; (6) map all colony locations; and (7) generate a final 2018 CWB report. The CCB successfully completed all deliverables and submitted the final to the DGIF in the spring of 2019.

A total of 270 waterbird colonies were surveyed during the breeding season of 2018. Colonies supported an estimated 44,391 breeding pairs of 23 species. Gulls were the most abundant group with more than 19,700 breeding pairs. Terns and waders accounted for 8,361 and 6,386 pairs respectively. Although they have declined dramatically, Laughing Gulls continue to be the most abundant species and were three times more abundant than any other species, accounting for nearly 40% of the total waterbird community. The barrier island/lagoon system of the Eastern Shore was the most important region for the majority of colonial species encountered. In 2018, this region supported 22 of the 23 species evaluated. The Eastern Shore accounted for 58.8% and 46.6% of all breeding pairs and colonies respectively. For 17 of the 23 species, the region supported more than 50% of the known coastal population.

The colonial waterbird community as a whole in coastal Virginia has declined dramatically since 1993 (2018 survey did not include Great Blue Herons or all Great Egrets). Population estimates for 15 (68%) of the 22 species assessed declined between 1993 and 2018. Declines varied considerably between species with 14 species declining more than 40% and 9 species declining more than 60%. Cattle Egrets showed the highest loss rate (-96.7%), declining from an estimated 1,459 to only 48 pairs. Little Blue Herons declined by 83% from 374 to only 64 pairs. Seven species increased between 1993 and 2018. Dramatic expansions were documented for White Ibis, Double-crested Cormorant, and Brown Pelican. Over the past 25 years, two major forces appear to be shaping the colonial waterbird community in Virginia. These include 1) regional shifts in population centers that are driving population increases in Virginia and 2) habitat degradation related to sea-level rise. With the exception of Great Egrets, all species that have increased over the past 20 years have experienced ongoing range expansions and are riding a population wave that is progressing through Virginia. This includes Great Black-backed Gull, Double-crested Cormorant, Brown Pelican, and White Ibis. Most of the decline in medium-sized waders is being driven

by habitat loss related to erosion of islands. This erosion results from sea-level rise, is ongoing and represents a significant threat to these populations. Several ground-nesting seabirds are likely more directly impacted by the loss of viable habitat and demographic impacts related to frequent flooding. The most notable example is the Laughing Gull that has experienced a catastrophic decline in both population and distribution.

i. Hampton Roads Bridge and Tunnel Seabird Colony Coordination

The construction of the Interstate-64 dual two-lane Hampton Roads Bridge and Tunnel (HRBT) resulted in the creation of two artificial islands that serve as the entrance and exit points for the current bridge-tunnels. By the late 1980's, the southern island (South Island) was colonized by several colonial nesting seabird species, including the state-threatened gull-billed tern (*Gelochelidon nilotica*), presumably because the island had suitable nesting substrate, a plentiful food source nearby, and was devoid of terrestrial predators. Following local declines in the number and size of seabird colonies throughout the lower Chesapeake Bay and seaside marshes and barrier islands of VA's Eastern Shore, South Island became Virginia's largest seabird colony supporting well over 10,000 pairs of royal terns (*Thalasseus maximus*), sandwich terns (*Thalasseus sandvicensis*), common terns (*Sterna hirundo*), gull-billed terns, black skimmers (*Rynchops niger*), laughing gulls, great black-backed gulls (*Larus marinus*) and herring gulls (*Larus argentatus*). In 2017, the VA Department of Transportation (VDOT) announced a proposal to expand the capacity of the I-64 HRBT and ease congestion by constructing a third bridge and tunnel, received funding and approval from the Federal Highway Administration and the Commonwealth Transportation Board. Construction was due to begin in fiscal year 2019, at which time the avian nesting activity would no longer be tolerated on South island and all avian management efforts would cease in perpetuity. The VDOT planned to pave all flat surfaces of South Island at the end of the 2018 breeding season as a means of discouraging birds from nesting there the following year. However, construction was delayed for several months and the VDOT agreed to allow the birds to nest on a portion of the island for another year. At the end of the 2018 breeding season, the VDOT paved the east half of the island and a small segment of the west half leaving the rest of the nesting habitat intact.

In the spring of 2018, the DGIF used Wildlife Restoration Program funds to contract with the VA Tech Shorebird Program (VTSP) to gather baseline information necessary for measuring seabird responses to the loss of the South Island breeding site. Project objectives included: establishing accurate breeding population estimates (by species) in the current year; determining where the island's breeding adults forage during the incubation period; marking as many birds as possible with uniquely coded field readable bands; and examining survival rates and post-breeding dispersal patterns.

Because some nesting habitat on South Island remained available to the birds during the 2019 breeding season, the DGIF renewed its contract with the VTSP to complete a second field season. Once again, the DGIF used Wildlife Restoration Program funds to pay for this work. Due to island access constraints imposed by the HRBT expansion project design-builder, fieldwork did not begin until June 15.

In the fall of 2019, DGIF continued conducting post-breeding re-capture surveys on VA's barrier islands and inlet sand shoals in an effort to re-sight birds banded by the VTSP before their departure to wintering grounds. So far this year, DGIF staff assisted the VTSP with royal tern banding efforts on South Island and in Chincoteague Bay, conducted several banded carcass surveys on South Island to help assess on-site mortality rates, and continued to perform 2019 post-breeding resighting surveys at known seabird roosting sites on the barrier islands.

2. Reptiles and Amphibians:

a. Conservation and Management of the Spotted Turtle (Clemmys guttata) and Seasonal Wetland Habitats in the Eastern U.S.

The Spotted Turtle (*Clemmys guttata*) has declined across its range and are of conservation concern throughout the United States and Canada. They are identified as Species of Greatest Conservation Need (SGCN) in all 21 states in which they occur and have been petitioned for federal listing under the Endangered Species Act. In cooperation with American Turtle Observatory (ATO) and funded through a Competitive State Wildlife Grant

from the U.S. Fish and Wildlife Service, a study for the overall population assessment has been taking place across its east coast range in this multi-state study. The overall objective of this project is to maintain populations of Spotted Turtles at their current levels throughout the 13 participating states and to achieve no net loss of suitable habitat at high priority sites throughout the region. Partners are accomplishing this by **1)** developing a strategic and quantitative Status Assessment and Conservation Plan for the Spotted Turtle in the eastern U.S., **2)** establishing multi-scale baselines for adaptive management, identifying and **3)** undertaking management priorities throughout the region (including nest site creation, prescribed burns and nest protection), and **4)** evaluating the success of management actions through monitoring and centralized data analysis. OUTPUTS include:

1. Status Assessment of Spotted Turtles in the eastern U.S. to assist with USFWS response to the petition for federal listing.
2. Coordinated monitoring protocol for Spotted Turtles in the eastern U.S. to define a baseline and adaptively assess the effectiveness of conservation actions.
3. Standardized sampling at 12 intensive and 40 rapid assessment sites in at least 9 states and centralized analysis of population assessments from Maine to Florida.
4. Assessment of habitat quality, connectivity, and potential range contraction.
5. Criteria for ranking and evaluating Spotted Turtle populations.
6. Identification of regionally significant, high-viability, demographically stable Spotted Turtle populations and development of a Conservation Area Network.
7. A regional, adaptive management strategy (Conservation Plan) for the conservation of Spotted Turtle in the eastern U.S. that prioritizes sites and conservation actions.
8. Expansion of the Spotted Turtle Working Group (STWG) by incorporating new members from states throughout the range. The STWG will work with the Northeast Wood Turtle Working Group and Northeast Blanding's Turtle Working Group to implement, assess, and adapt recommended conservation strategies for freshwater turtles, with monthly conference calls and a range-wide conservation symposium to support conservation efforts.
9. Improvement of habitat management for Spotted Turtle through: a) technical assistance to at least 20 landowners and agencies to facilitate land protection and habitat management, b) improvement of at least 5 nest sites or wetland areas through hand-clearing of vegetation, soil scarification, or water-level management (to improve recruitment, basking, and overwintering habitat, increasing population size), and c) monitoring the benefit of prescribed burning and other management actions at ≥ 12 sites throughout the region to inform an adaptive management process.
10. Increased population viability through the protection of at least 15 nests and the release of at least 120 turtles from cranberry operations. We anticipate these actions will lead to an increase of at least 165–185 Spotted Turtles that would have otherwise been lost.

In 2018-2019, ATO and the Smithsonian Conservation Biology Institute (SCBI) compiled element occurrence records from partner states, developed a regional monitoring protocol, sampled spotted turtles sites using the regional protocol, collected, compiled, cleaned, and summarized monitoring data collected by partners throughout the region, began building species distribution models for conservation planning purposes, coordinated monthly calls among partners, and planned for a range-wide conservation symposium for the species, which will occur in West Virginia in November 2019. Over the coming year, contractors and partners will continue to use the data collected to assess the species status throughout the 10 participating states, develop an adaptive comprehensive strategy for conservation by assessing and ranking populations, and undertake identified management actions.

In Virginia, multiple sites have been surveyed for Spotted Turtles by various conservation partners, including DGIF. In the spring of 2019, DGIF conducted two trapping periods at Grafton Ponds Natural Area Preserve in York County. Four trap arrays with 5 traps each resulted in the capture of 97 individual turtles. These turtles were processed, marked and released. In addition, 20 tissue samples were taken for genetic analysis, which is being funded through a Regional Conservation Needs grant.

b. General Reptile and Amphibian Surveys

Reptiles and amphibians are the least understood group of vertebrates in the Commonwealth. Their inherently secretive and often fossorial nature makes them difficult to study and it has only been in the past few decades that more attention has been given to their conservation. To gain a better understanding of their status and management, DGIF staff have been conducting surveys on private and public lands, including Wildlife Management Areas managed by the Department. In the FY19, Big Woods WMA, Princess Anne WMA, Ware Creek WMA, Cavalier WMA, Hog Island WMA, Ragged Island WMA, Mattaponi WMA, and Short Hills WMA were surveyed in 2019. Fifty-five species were recorded. Some of these species were State Endangered or Threatened, such as the Timber (i.e. Canebrake) Rattlesnake (*Crotalus horridus*) and Barking Treefrog (*Hyla gratiosa*). Other Species of Greatest Conservation Need (SGCN) identified in Virginia's Wildlife Action Plan were also recorded, such as the Northern Diamond-Back Terrapin (*Malaclemys terrapin*) and Rainbow Snake (*Farancia erytrogramma*). One species of particular interest was the Eastern Glossy Swampsnake (*Liodytes rigida*).

The Eastern Glossy Swampsnake (formerly known as the Glossy Crayfish Snake) is a rare and secretive species that has not been observed in Virginia for 28 years and is only known from one location in New Kent County. However, individuals have been recorded only about one kilometer south of the Virginia/North Carolina border on Knott's Island. With permission from Mackay Island National Wildlife Refuge, cover materials were laid out on the Virginia side of the refuge to survey for these snakes. Unfortunately, no Glossy Swampsnakes have been seen yet. However other rarely seen herpetofauna have been recorded during surveying such as, the Rainbow Snake (*Farancia erytrogramma*) and Two-toed Amphiuma (*Amphiuma means*).

3. Freshwater Mussels

Atlantic Slope Freshwater Mussel Propagation

The VA Department of Game & Inland Fisheries continued its cooperative Atlantic Slope freshwater mussel propagation facility with the U.S. Fish & Wildlife Services' Harrison Lake National Fish Hatchery in Charles City, which marks the 12th year of production and 13th year of operation at the VA Fisheries and Aquatic Wildlife Center (VFAWC).

Propagation began in March and ended in July. During that period of time, DGIF produced 1,138,730 juvenile mussels from ten species (Table 1), which was well over DGIF's target number of 938,600 juveniles. VFAWC continued propagation with federal and state endangered James Spiny mussel (*Parvaspina collina*, JSM), the state threatened and federally petitioned Green Floater (*Lasmigona subviridis*), and state endangered Brook Floater (*Alasmidonta varicosa*). This year was particularly good for James Spiny mussel propagation. DGIF successfully metamorphosed just over 33,000 juveniles, which was double the number metamorphosed in DGIF's previous most successful year (2016). At last count, about 8,500 are surviving in culture. DGIF worked to improve its *in vitro* procedure and technique in our laboratory at Virginia Commonwealth University's Rice Rivers Center. This procedure substitutes the use of a fish host with a sterile nutrient medium, in which, the glochidia complete their metamorphosis. This method is important for propagation of mussel species whose host fish are unknown or difficult to obtain. This year DGIF worked with Creeper (*Strophitus undulatus*) and Triangle Floater (*Alasmidonta undulatus*).

This season, DGIF provided over 100,000 mussels of six species to outside organizations in support of research, propagation, and river restoration in the region (Table 2). DGIF continued to release propagated mussels from its 2016-2018 stocks, with just over 60,000 tagged mussels of eight species released in the Dan River, City of Danville, Pittsylvania and Patrick County; James River, City of Richmond; Nottoway River, Southampton County; Tye River, Nelson County; Rock Island Creek, Buckingham County; SF Shenandoah River, Page County; South River, Augusta County; and Meherrin River, City of Emporia (Table 3). One release of note includes the addition of 750 three-year-old James Spiny mussel to three sites in the Tye River and one site in Rock Island Creek. Another is the release of 340 one-year-old Brook Floater, a species that may be extirpated from the Commonwealth of Virginia, to the South River. Additional mussels will be released in October and November 2019, with any remaining mussels released in 2020. Juvenile mussels from DGIF's 2019 stock will start to be

released in 2020, depending on species and size. All mussels were or will be tagged for future monitoring of survival and reproduction.

Table 1. 2019 Propagation goals versus actual production numbers.

Mussel Species	River	Production goal	Actual Number of Juveniles
<i>Alasmidonta undulata</i>	Cacapon	**	88
	South	1,000	384
	Dan	100	*
<i>Alasmidonta varicosa</i>	Cacapon	5,000	6,671
<i>Elliptio complanata</i>	Broad Bull Run/Cacapon ¹	2,000	In progress
<i>Elliptio fisheriana</i>	Broad Bull Run ¹	N/A	-
<i>Fusconaia masoni</i>	Dan	500	0
<i>Lampsilis cariosa</i>	Dan	50,000	56,037
<i>Lampsilis cardium</i>	Cacapon	100,000	79,960
<i>Lasmigona subviridis</i>	Back Creek	**	70,904
	Cacapon	5,000	4,382
	Dan	100,000	11,891
<i>Lampsilis radiata</i>	Potomac/Anacostia	25,000	18,434
<i>Ligumia nasuta</i>	Delaware	**	83,766
	Nottoway	50,000	36,767
	Potomac/Anacostia	25,000	12,770
<i>Parvaspina collina</i>	Johns Creek	**	28,368
	Mill Creek	10,000	3,587
	Rocky Creek	**	1,542
	Dan	15,000	*
<i>Strophitus undulatus</i>	Cacapon River ¹	**	11,367
	South ¹	N/A	2,041
<i>Utterbackiana implicata</i>	Rappahannock	250,000	402,692
	Delaware	200,000	200,726
	Potomac/Anacostia	100,000	106,353
		938,600	1,138,730

¹*In vitro* propagation research and development.

*No brooding females collected. **Added to propagation plan.

Table 2. Distribution information for mussels provided by VFAWC to others for toxicology, river restoration, and propagation.

Species	Destination	River	Number	Age (days)	Purpose
<i>Alasmidonta varicosa</i>	WVDNR	Cacapon	201	515	River Restoration
<i>Lampsilis cariosa</i>	NCWRC	Dan	2,000	433	River Restoration
<i>Lampsilis radiata</i>	NCSU	Nottoway	39	602	Toxicology
	NCSU	Pond misc.	520	3	Toxicology
	UMESC	Meherrin	504	1,026	Toxicology
	UMESC	Nottoway	540	298	Toxicology
	AWS	Anacostia	3,365	112	River Restoration
<i>Lasmigona subviridis</i>	NCWRC	Dan	701	805	River Restoration
<i>Ligumia nasuta</i>	PDE	Delaware	20,215	16	Propagation
	PDE	Delaware	2,288	35	Propagation
	PDE	Delaware	16,916	90	Propagation
<i>Utterbackiana implicata</i>	PDE	Delaware	15,000	13	Propagation
	PDE	Delaware	2,152	25	Propagation
	PDE	Delaware	37,551	89	Propagation
	VCU	Rappahannock	1,350	332	Research
	JRA	Rappahannock	70	337	Research
	AWS	Anacostia	3,300	143	River Restoration
<i>Villosa constricta</i>	NCWRC	Dan	466	839	River Restoration
			107,178		

Note: West Virginia Division of Natural Resources (WVDNR), North Carolina Wildlife Resources Commission (NCWRC), North Carolina State University (NCSU), Upper Midwest Environmental Sciences Center (UMESC), Partnership for the Delaware Estuary (PDE), Virginia Commonwealth University (VCU), James River Association (JRA), Anacostia Watershed Society (AWS)

Table 3. Release information for tagged mussels.

Species	Release River	Broodstock River	Number	Release Date	Age (years)	Mean Length (mm)
<i>Alasmidonta varicosa</i>	South	Cacapon	340	10/01/19	1+	32.0
<i>Lampsilis cardium</i>	SF Shenandoah	Cacapon	3,210	6/26/19	1+	26.2
<i>Lampsilis cariosa</i>	Dan	Dan	9,965	7/1/19	1+	29.7
	Dan	Dan/Nottoway	6,677	7/31/19	1+	31.1
	Dan	Dan	2,947	8/8/19	1+	27.6
	Nottoway	Dan	1,008	7/19/19	1+	31.0
	Dan	Dan	4,247	8/21/19	1+	29.9
	South	Dan	498	10/01/19	1+	30.8
<i>Lampsilis radiata</i>	Meherrin	Meherrin	5,768	6/17/19	3+	48.1
	Nottoway	Nottoway	4,516	7/19/19	1+/2+	44.2
<i>Lasmigona subviridis</i>	Dan	Dan	1,768	7/1/19	2+	36.3
	Dan	Dan	5,924	7/31/19	1+	29.7
	Dan	Dan	134	8/8/19	1+	29.3
<i>Parvaspina collina</i>	Dan	Dan	5	8/22/19	2+	38.12
	Tye	Rock Island	638	10/9/19	3+	37.2
	Rock Island	Rock Island	152	10/9/19	3+	36.7
<i>Utterbackiana implicata</i>	Nottoway	Rappahannock	2,420	3/28/19	1+	33.6
	Nottoway	Rappahannock	3,680	5/31/19	1+	34.1
	James	Rappahannock	3,740	6/4/19	1+	31.4
<i>Villosa constricta</i>	Dan	Dan	2,530	7/1/19	2+	26.4
	Dan	Dan	250	7/31/19	2+	28.4
Total			60,417			

III. Waterfowl and game birds

1. Breeding Waterfowl Survey:

Virginia participates in an Atlantic Flyway breeding waterfowl survey in the spring of each year. Breeding data collected in Virginia is combined with traditional breeding survey data from the northern breeding regions to allow the Atlantic Flyway to more effectively manage its waterfowl populations. The survey results are being used to develop Adaptive Harvest Management models specific to the Atlantic flyway.

In Virginia, 165 plots (each 1km x 1km) were surveyed in April/May 2019 to assess the numbers of local-breeding waterfowl. The mallard pair estimate (28,198) increased 72% (7,913) from 2018. Black duck pair estimates (750) increased 72% from last year (205). The number of Wood duck pairs (8,308) decreased 60% from last year (14,237). The breeding pair estimate for Canada geese (46,254) decreased 13% from the 2018 estimate (53,477).

2. Resident Canada Goose Banding

During the 2019 summer banding period, 1,087 resident Canada geese were captured as part of the state and Atlantic flyway resident Canada goose monitoring project. Band recovery information is used to evaluate survival, movements, population estimation, migration corridors and discerning breeding and wintering affiliations. Information from banding studies has helped develop specific management strategies including special hunting seasons, such as those for resident Canada geese.

3. Pre-Season Waterfowl Banding

DGIF conducted pre-season waterfowl banding efforts during August and September of 2019, prior to the fall and winter waterfowl hunting seasons. Birds were captured by “night-lighting” from an airboat and with baited

swim in traps in five locations in Virginia's Coastal Zone. In 2019, there were a total of 416 ducks newly banded, including 393 wood ducks, 17 mallards, 4 green-winged teal and 2 blue-winged teal and 1. This banding data provides important information used to manage populations, establish hunting seasons and evaluate other management programs. Specific objectives of pre-season waterfowl banding are to determine: 1) distribution of harvest from breeding and wintering areas, 2) changes in harvest pressure as measured by recovery and harvest rates, 3) annual and long-term survival rates of specific populations. The focal species in Virginia pre-season banding efforts are wood ducks which breed locally throughout the states.

4. Mourning Dove Banding

Mourning doves are banded as part of a flyway and nation-wide program to monitor dove populations and evaluate dove movements, survival and hunting-season harvests. The project is organized through the various National Dove Managements Units and coordinated by the USFWS. Banding quotas have been established for each sub-regions (groups of states) based on dove distribution and harvest. Virginia is included in the South Atlantic sub-region along with North and South Carolina. Banding takes place during the late summer from July 1 through August 31. The banding quota for Virginia is 500 doves, and the quota for the sub-region was 2,700 doves. In 2019, a total of 551 doves were banded at 20 different sites across Virginia. Doves were banded with standard USFWS leg-bands. Of the doves banded, 52% were identified as juveniles (hatch year or HY), 46% were identified as adults (AHY or after hatch year), and 2% were of unknown age. The number of doves banded in Virginia in 2019 was similar to the number banded in 2018, and the percentage of juvenile doves banded was similar to the long-term average (50%). The number of doves banded in the South Atlantic Region and the EMU were similar to the long-term average. Data were compiled and sent to the Bird Banding Lab and the Iowa Coop Unit for analysis. This information is included in the annual Mourning Dove Status Report produced by the USFWS each year, and will be used in developing dove harvest regulations. This job addresses the objectives of the National Mourning Dove Strategic Plan, the Mourning Dove Banding Needs Assessment (USFWS), and the Interim Mourning Dove Harvest Management Strategy (USFWS).

5. Woodcock Singing Grounds Survey

The objectives of this job are to estimate woodcock breeding populations in Virginia and in the Eastern Woodcock Management Unit (EMU), and the information obtained is used to estimate woodcock population trends for states, provinces, management regions, and the continent. The survey is the major source of information used in setting the annual woodcock hunting season regulations. In the spring of 2019, 13 woodcock survey routes were completed along permanent, randomly selected transects in Virginia. Each route was 3.6 miles (5.4 km) long and consisted of 10 listening points. The routes were surveyed shortly after sunset by observers who drove to each of the 10 stops and recorded the number of woodcock heard peenting (the vocalization by displaying male woodcock on the ground). The number of woodcock heard in 2019 was not significantly different from the number recorded in 2018 in the EMU. However, the 10-year trend (2009-2019) showed a significant decline in the numbers of woodcock heard on the singing grounds survey in the Eastern Region. The long-term trend (1968-2019) also indicates a significant decline (-1.08% per year) in the Eastern Region and the Central region (-0.89% per year). The 2018 recruitment index for the U.S. portion of the Eastern Region (1.71 juveniles per adult female) was 27% above last year and was 5.6% above the long-term regional average. In Virginia, estimates of breeding woodcock have declined 4% over the past 10-year period, and 5% over the long term. The annual American Woodcock Status Report for 2019 published by the USFWS provided a summary of the information on woodcock population status and harvest.

6. Submerged Aquatic Vegetation Trends

The objectives of this job are to monitor the density and composition of Submerged Aquatic Vegetation (SAV) in Back Bay, Virginia. The survey consisted of examining bottom samples collected on 6 different transects spaced out across the Virginia portion of Back Bay. Sampling sites were located at 500 meter intervals along transects lines, and three (2 square foot) bottom samples were taken at each sampling site. Plant species were identified and a visual estimate of percent cover was recorded for each species present. SAV was present in 13% of the 258 samples. The SAV species found (and percent occurrence) included wild celery (5.3%), naiad (3%),

Eurasian milfoil (2.3%), sago pondweed (1.5%), and redhead grass (0.4%). SAV abundance in 2019 was similar to that found in 2018, but has been gradually declining since 2009. The species of SAV found were similar to those reported in past years, but were present in slightly different percentages. This job is part of a cooperative effort by various agencies in VA and NC, including the USFWS National Wildlife Refuges, USGS, US ACE, and several universities to monitor SAV in the Currituck-Back Bay ecosystem and to evaluate methods to restore this habitat for the benefit of fish and wildlife populations.

IV. Permits

The Department issues forty-one (41) different types of permits/special authorizations for various activities conducted all over the Commonwealth with many of these permits being issued to permittees who are located in the Commonwealth's Coastal Zone. The majority of the types of permits issued for the Coastal Zone area are for wildlife rehabilitators and commercial nuisance animal providers. Permits issued by the Department for permittees **only** in the Coastal Zone are Eel Pot for Sale Permits, Eel Pot for Personal Use Permits, Haul Seine Permits to Catch Minnows and Chubs for Sale, Haul Seine Permits to Take Fish for Personal Use, Haul Seine Permits to Take Nongame Fish for Sale, and Permits to Collect Snapping Turtles and Hellgrammites for Sale. It appears that more Scientific Collection Permits are issued for the Coastal Zone area than any other area in the Commonwealth. During the period of April 1, 2019 to September 30, 2019 the Department has only taken administrative enforcement action (permit suspension) against one permittee located in the Coastal Zone.

SECTION B.3 FEDERAL CONSISTENCY

During the period of April 1, 2019 and September 30, 2019, the Office of Environmental Impact Review/Federal Consistency (OEIR) reviewed 99 development projects and management plans for consistency with the Virginia Coastal Zone Management Program (VCP). This represents 75% of the total amount of projects reviewed (132) during this period. Major state projects accounted for 23 projects, 4 were State Corporation Commission reviews, 6 were National Environmental Policy Act (NEPA) documents without a federal consistency component, 43 were federal actions, and 56 were federally funded projects. The 43 federal actions included 24 federal agency activities, 19 federal licenses and approvals, and 0 outer continental shelf projects. The 24 federal agency activities included 8 projects submitted under the residual category pursuant to the federal consistency regulation (15 CFR 930.31(c)), which consisted of U. S. Department of Housing and Urban Development (HUD) and U. S. Department of Agriculture (USDA) projects. All federal consistency determinations and federal consistency certifications were completed within the established legal deadlines.

The OEIR continues to provide informal training on federal consistency requirements to consultants who prepare consistency documents for federal agencies and applicants for federal permits and maintains a website for Federal Consistency Reviews which can be accessed through DEQ's main webpage or found at <http://www.deq.virginia.gov/Programs/EnvironmentalImpactReview.aspx> The OEIR webpage is updated weekly.

Table 1 depicts federal projects in Tidewater Virginia reviewed from 4/1/19 to 9/30/19.

TYPE OF FEDERAL PROJECTS REVIEWED*	NUMBER OF PROJECTS COMPLETED	REVIEW PERIOD
*Direct Federal Actions	24	30-60 Days
** Federal Activities (approvals & permits)	19	90 Days
***Federally Funded Projects	56	30 Days
Outer Continental Shelf	0	45-60 Days
TOTAL	99	30-90 DAYS

*Includes 8 FCDs reviewed under the residual category of Subpart C of the Regulations. (eg. HUD Mortgage Insurances).

**These are projects reviewed under Subpart D of the Regulations. These projects include individual permits issued pursuant to Section 404 of the Clean Water Act administered by the U.S. Army Corps of Engineers.

*** These include federal assistance to state and local government reviewed under Subpart F.

FEDERAL PROJECTS REVIEWED FOR CONSISTENCY WITH THE CZMP from 4/1/19 to 9/30/19

I. Federal Agency Projects

The following projects are examples of federal agency projects subject to Subpart C of 15 CFR 930.33(a).

Harry W. Nice/Thomas "MAC" Middleton Bridge Replacement Project - The Maryland Transportation Authority (MDTA or applicant), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the Nice/Middleton Bridge in Charles County, Maryland and King George County, Virginia. The purpose of the Nice/Middleton Bridge Replacement Project is to:

- provide a Potomac River crossing that is consistent with the US 301 approach roadways;
- improve traffic operations and safety across the bridge; and
- reduce traffic impacts during bridge maintenance and rehabilitation.

The project consists of the construction of a four-lane bridge north of the existing bridge, with 12-foot travel lanes, 2-foot inside and outside shoulders, 2-foot median barrier, and a 4% maximum grade. The current design provides the option of an 8-foot wide barrier-separated pedestrian/bicycle path. The centerline of the navigational passageway over the Potomac could shift up to 585 feet to the west; the vertical clearance would remain the same while the horizontal clearance would be reduced to 250 feet. Construction in Virginia is from the mean low tide of the Potomac River to the western-most project limits. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Continuing Authorities Program, Section 204, Beneficial Uses of Dredged Material, Cedar Island, Virginia - The U.S. Army Corps of Engineers (Corps) proposes to conduct the Continuing Authorities Program, Section 204, Beneficial Uses of Dredged Materials, Cedar Island project off of the Atlantic coast of Accomack

County, Virginia. The purpose of the project is the beneficial reuse of dredged material from the Finney Creek Channel and the Bradford Bay Channel (federal navigation channels). The Preferred Alternative (Alternative 1A) consists of thin-layer spraying of dredged material over a 194-acre portion of the existing cordgrass-dominated Fools Gut Marsh Island (Site 1A) to enhance the existing wetland. The Fools Gut Marsh Island is located across the navigation channel from the Wachapreague Marina in the Cedar Island Back-barrier tidal wetlands system. The spraying would be completed via a hydraulic cutterhead dredge with a pipeline that would spray the dredged material from the federal navigation channel sites to the southern portion of Fools Gut Marsh Island. The quantity of dredged material is estimated to be 77,435 cubic yards per treatment.

The project lifecycle is approximately 50 years, beginning in 2027 with the initial thin-layer spraying at Site 1A. Topographical surveys followed by the thin-layer spraying would occur again in 2041 and 2055; this schedule coincides with the dredging maintenance cycle for the Bradford Bay and Finney Creek navigation channels and anticipated sea level rise effects. The thin-layer spraying will ensure that the marsh island is properly maintained. The action is limited to placement of the dredged material; the dredging activity is accomplished under a separate authority. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Hydrographic Survey of the Chesapeake Bay - The NOAA Office of Coast Survey proposes to conduct a hydrographic survey of a 427 square nautical mile area near the coast of Virginia in the lower portion of the Chesapeake Bay. The project is expected to begin mid-July 2019, ending February 2020. Survey dates could change due to weather, equipment difficulties, or other unforeseen circumstances. The study area will be surveyed using a combination of single beam and multi-beam echo sounders and side scan sonar. Additionally, a Conductivity, Temperature, and Depth (CTD) instrument will be used to collect sound speed data during the survey. Sediment samples from the top layer of the sea floor will also be collected. These samples will be returned after they have been characterized and photographed. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Expansion of Existing Parking Lot Garage 2 Infill and Construction of New Surface Parking Lot at Westfield Headquarters - The Department of Defense (DOD) proposes to conduct the Expansion of Existing Parking Lot Garage 2 Infill and Construction of New Surface Parking Lot project at the Westfield Headquarters facility located at 14675 Lee Road, Chantilly, Virginia. The proposed project involves increasing the available secure parking at the facility by 400 parking spaces. This additional parking will be added by expanding an existing parking garage (Garage 2 Infill) and the construction of a new surface lot (North Parking Lot). The additional parking is necessary to address a shortfall in available secure parking at the facility, particularly during special events. The proposed action involves two limits of disturbance (LODs), totaling 6.4 acres.

The Garage 2 Infill will have a LOD of 1.6 acres, located between the existing Garage 2 and Lee Road. This area contains 0.8 acre of deciduous hardwood forest which would be cleared. The Garage 2 Infill includes one at-grade parking lot and two elevated lots, using a similar design as the existing garage. The North Parking Lot will have a LOD of 4.8 acres on an area of maintained lawn. Construction of the garage is expected to take one year, while the North Parking Lot will be completed in six months. The DOD has submitted a Federal Consistency Determination which finds the proposed action consistent to the maximum extent practicable with the enforceable policies of the Virginia Coastal Zone Management Program. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

II. Residual Category

The following consistency determinations were submitted as a residual category of Subpart C pursuant to the federal consistency regulation 15 CFR 930.31(c).

Bickerstaff Crossing Apartments - The U.S. Department of Housing and Urban Development (HUD) proposes to provide federal funding through the Section 8 Housing Choice Voucher Program to Surber Development &

Consulting, LLC (applicant or developer) for the construction of the proposed Bickerstaff Crossing Apartments in Henrico County. The Section 8 program allows low-income families, the elderly, and the disabled to choose and lease safe, decent, and affordable rental housing in the private market. Eight Section 8 Project-Based Vouchers will be associated with the project. In addition, the developer has applied for a 9% Low-Income Housing Tax Credit through HUD. The proposed development will consist of 60 residential units (30 three-bedroom and 30 two-bedroom units) in a single three-story building. The 5.272-acre property, located at 1401 Bickerstaff Road is currently undeveloped. In addition to the residential units, a multipurpose room, exercise room, resident computer center, playground and picnic pavilion will also be constructed. On-site parking of 120 spaces is included in the development. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Hunter Woods Fellowship House - The U.S. Department of Housing and Urban Development proposes to provide mortgage insurance under the HUD Section 223(f) program to Fellowship Square (applicant), the owner of the Hunter Woods Fellowship House apartment building in Fairfax County. The Section 223 (f) program insures mortgage loans to facilitate the purchase or refinancing of existing multifamily rental housing. This project is being submitted for Multifamily Accelerated Processing (MAP). The 2.815-acre property located at 2231 Colts Neck Road in Reston contains one eleven-story building with 224 units, walkways, asphalt-paved parking areas and landscaping. The building was originally constructed in 1979 and the refinancing will include some interior and exterior renovation work. Interior work will include the reconfiguring of 12 units to comply with the Uniform Federal Accessibility Standards, upgrading common area laundry rooms and bathrooms, painting, and repairing doors and windows. HVAC, electrical, and plumbing upgrades will also be made. Exterior work will include masonry repairs, roof repairs, handicapped parking space regrading, sidewalk repairs, and construction of a new trash and recycling enclosure. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

III. Federal Activities (Permits, Licenses and Approval)

These projects were reviewed pursuant to Subpart D of the Consistency Regulations (15 CFR §930.53)

Cosby Village Townhomes - Timmons Group submitted a FCC on behalf of Cosby Village, LLC (the applicant) for the proposed construction of multi-family residential development, called Cosby Village Townhomes, in Chesterfield County. The proposed project site is approximately 44.3 acres and is bounded by Otterdale Road, Village Square Parkway and Cosby Road. Cosby Village, LLC is proposing the construction of multifamily townhomes homes, parking areas, and associated utilities and stormwater management facilities. The proposed construction would result in impacts to streams and wetlands. Therefore, the applicant is currently pursuing a DEQ Virginia Water Protection Permit and an U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

New Kent County Airport Security Fence - New Kent County (applicant), owner and operator of the New Kent County Airport (W96) is seeking approval from the Federal Aviation Administration (FAA) to construct the Security Fence project at the airport located at 6901 Terminal Road, in Quinton, Virginia. The proposed project involves the closing of the existing security fence which is currently open at the east end of the airport property, thus preventing nuisance wildlife and intruders from entering the property in future. Approximately 1,600 linear feet of eight-foot chain-link fence and two double-swing gates are proposed for installation. Approximately 4,000 square feet of tree clearing will be necessary to accommodate the project construction. The proposed action will take place entirely on airport property. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Pavement Rehabilitation and Lighting Improvements of Runway 5/23, Taxiway C, & Taxiway V at Norfolk International Airport - The Norfolk International Airport (ORF or applicant), located in the City of Norfolk, is proposing to construct improvements to its runway and taxiways. The airport is proposing to upgrade lights and

signs on the airfield. The project would also include changing the size of pavement at the intersection of Runway 5 and Taxiway C and replacing concrete panels on Taxiway V. In addition, contractors would mill and then overlay the pavement on Runway 5/23. Since the airport is federally obligated, ORF submitted a FCC for review. DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

Line VM-128 Elbow Replacements Project, Columbia Gas Transmission, LLC - Columbia Gas Transmission, LLC (Columbia) proposes to replace two (2) 10-inch diameter 90-degree elbow fittings on the existing Line VM-128 natural gas transmission line near Carrollton in Isle of Wight County, Virginia. The 0.75-acre project area is located approximately 0.85 miles southwest of the James River Bridge. The site is bisected by Carrollton Boulevard (Route 17) from the northeast to the southwest. The project consists of excavation, inspection, removal, and replacement of the elbow fittings. The project will occur within Columbia's Line VM-127 and Line VM-128 right-of-way and will also utilize an adjacent area associated with G&G's Cycle Works and the Dock of the Bay Restaurant for parking and staging of construction equipment and supplies. Approximately 0.44 acres of the site consists of contractor staging and parking area. Existing site conditions consists of maintained natural gas transmission right-of-way, maintained turf, and gravel and paved parking areas. Total land disturbance for the relocation project is 33,000 square feet (0.75 acres). DEQ concurs that the project is consistent with the enforceable policies of the Virginia Coastal Zone Management Program.

IV. Outer Continental Shelf Activities

No projects were reviewed during the time period of this report for this category.

V. Federal Funds

DEQ completed the reviews of 56 projects from April 1, 2019 to September 30, 2019 that were submitted under 15 CFR, Part 930, Subpart F for federal financial assistance to state and local governments. The projects break out as follows:

- 14 wharf and marina improvement projects
- 3 water line/water treatment plan improvement projects
- 4 multi-family home construction/renovation projects
- 1 trail rehabilitation project
- 26 single-family home construction/renovation projects
- 4 home demolition projects
- 1 States Organization for Boating Access (SOBA) conference
- 2 commercial space/single-family home projects
- 1 mobile home renovation project

Examples of Federally –funded projects which were reviewed:

Flannagan Marina - The Virginia Department of Health (VDH or applicant) proposes to use U.S. Fish and Wildlife Service Clean Vessel Act (CVA) funding to install a pump-out system at the Flannagan Marina located on the Flannagan Dam in Dickenson County. VDH receives CVA funding to assist Virginia localities and private sector entities in the construction, renovation, operation, and maintenance of pump-out stations and waste reception facilities for recreational boaters and also for educational programs that inform boaters of the importance of proper disposal of their sewage through the Sport Fish Restoration and Boating Trust Fund. The project will include installation of a mobile sewage collection system on service docks proposed to be constructed by the owners. The mobile sewage collection system is designed to remove sewage from Type III Marine Sanitation Devices at multiple locations on the service docks. The sewage holding tank will be used to collect and store the sewage until it can be pumped by a licensed sewage hauler.

St. Luke's Apartment - The Community Development Block Grant (CDBG) funding from the U.S. Department of Housing and Urban Development to improve street lighting along Laburnum Avenue in the area of St. Luke's Apartments in Henrico County. The proposed project will involve the installation of approximately 26 new streetlight poles, 14 new lights on existing poles and upgrades of 4 existing streetlight poles. Wires to the new lights will be above ground except for the lights on Pilot Lane, which will run under the street. Ground disturbance will be approximately 8 feet deep for the new poles and 4 feet deep for burying wires using the directional drill method. Wetlands are present at 205 E. Laburnum Avenue, south of the project area in the middle of the block between Conway Street and Delmont Street.

JRPS Pump House Asphalt Trail - The City of Richmond (applicant) proposes to use federal funding via a Federal Highway Administration Recreational Trails Program (RTP) grant award for the construction of a 530-foot long, 8-foot wide asphalt trail within the James River Park System located in the City of Richmond. The proposed project intends to connect existing trail networks between Pump House Park, Byrd Park, and the North Bank Trail. The RTP grant is being administered by DCR and the City of Richmond.

95 Henry Clay Road - The Newport News Redevelopment and Housing Authority (NNRHA) proposes to use Community Development Block Grant (CDBG) funding from the U.S. Department of Housing and Urban Development (HUD) to repair an owner-occupied single-family residence located at 95 Henry Clay Road, in the City of Newport News. The roughly .22-acre parcel was originally developed in 1962. The proposed project will include installation of a new roof to include new vent covers and flashing and a new hot water tank.

SECTION B.4 PROGRAM CHANGES

During the reporting period, the Virginia CZM Program continued to work with the Virginia Coastal Policy Center (VCPC) and the Narrative Policies Advisory Committee to develop draft narrative enforceable policies. VCPC's work is supported by a Virginia CZM FY 17 grant. The advisory committee consist of representatives from NOAA, DEQ, VDH, the Office of the Attorney General, the Department of Defense, and the Hampton Roads Planning District Commission. VCPC staff provided an update to the Virginia CZM Program's Coastal Policy Team (CPT) at its September, 2019 meeting and the CPT agreed that the draft policies should be submitted to NOAA for incorporation. VCPC staff drafted a public notice, which was reviewed by CZM and DEQ-EIR staff. After consulting with NOAA on the specific steps in the approval process, the draft policies will be submitted to NOAA and the public review process will begin.